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# OWNER'S MANUAL

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16-BIT DIGITAL SYNTHESIZER  
KC10

# SPECTRA

# KAWAI

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

## ***Thank you for purchasing Kawai 16-bit Digital Synthesizer SPECTRA KC10!***

The KC10 uses advanced 16-bit and synthesized waveforms for optimum sound quality at an affordable price. And the unique function from KAWAI K series, such as MULTI patch and DRUM SECTION, allow you to create hi-quality musical performances.

Please read this manual thoroughly before using the KC10. It has been written to allow you to get the most of this instrument's capabilities with the least amount of effort.

## **FEATURES**

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### ***128 High Quality Internal Waveforms***

The KC10 has a total of 128 selectable wave combinations. Each combination is made from high-quality 16-bit PCM and DC (Digital Cyclic) waveforms.

### ***MULTI Play Capabilities***

4 SINGLE patches may be played at one time freely combining Layer and Split functions, enabling a wide range of warm and expressive sounds.

### ***36 RHYTHM Patterns***

The KC10 contains 36 preset rhythm patterns, which are suitable for any kind of musical environment such as rock, pops, jazz, latin and any others. These patterns come with INTRO/ENDING and FILL IN as well.

### ***AUTO ARPEGGIATOR***

This function allows you to play arpeggio patterns automatically, by pressing one chord on KC10's keyboard. There are many selectable forms (ex. UP, DOWN and RANDOM) which can also be used in SYNC with the rhythm patterns.

### ***DRUM SECTION***

The KC10 has its own DRUM SECTION which can be controlled independently from SINGLE patches or the 4 SECTIONS of a MULTI patch.

### ***Variable Multi-Timbral Operation***

In the MULTI PLAY Mode, each tone may be set to a specific MIDI channel, allowing the KC10 to function as though it were four MIDI tone generators. The variable Multi-Timbral function also allows the voice of each section to be played simultaneously.

# Care and Maintenance

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## ***Proper Care***

Your KC10 synthesizer is a delicate musical instrument. To prevent breakdowns and ensure years of reliable, trouble-free service, shield it from:

- Direct sunlight and exposure to the elements
- Extremes in temperature or humidity
- Dusty environment
- Vibration ... especially during transport

## ***Power Supply***

- Use only AC adaptor shipped with the KC10 and connect it only to a power supply with a voltage within the limits stated on the ratings plate on the back.
- Make sure that all power switches are off before changing equipment connections.
- Check all equipment connections before applying the power.
- Do not connect to the same circuit as a heavy load or equipment that generates line noise.

## ***Line Noise Reset***

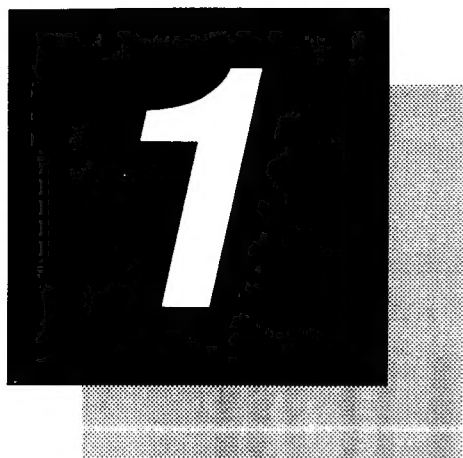
The high-speed microprocessor at the core of the KC10 is extremely sensitive to line noise and sudden fluctuations in the supply voltage. Should it "lock up" under such conditions, simply turn the KC10's power off for a few seconds and then reapply the power.

## ***Cleaning***

- Clean the instrument with a soft cloth, a mild detergent, and luke warm water.
- Never use harsh or abrasive cleansers or organic solvents.

## ***Battery Backup***

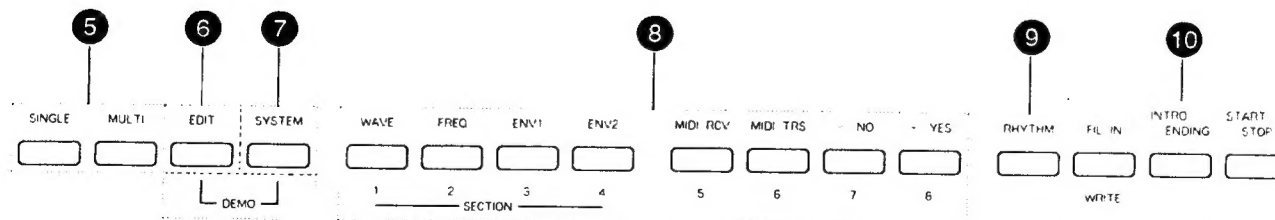
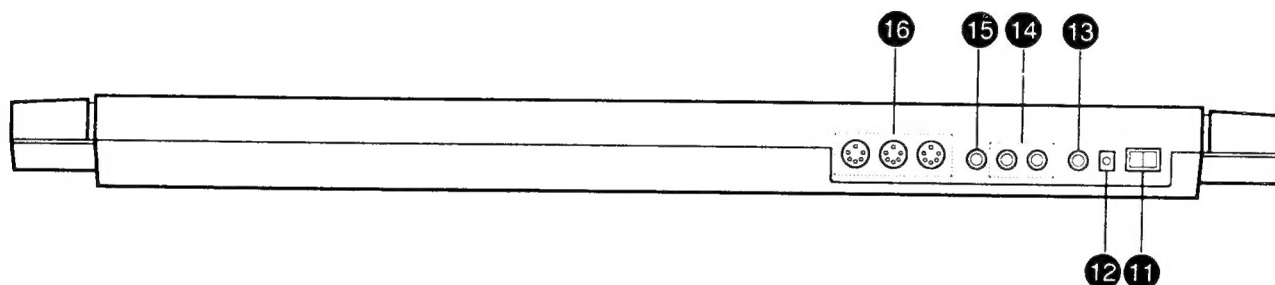
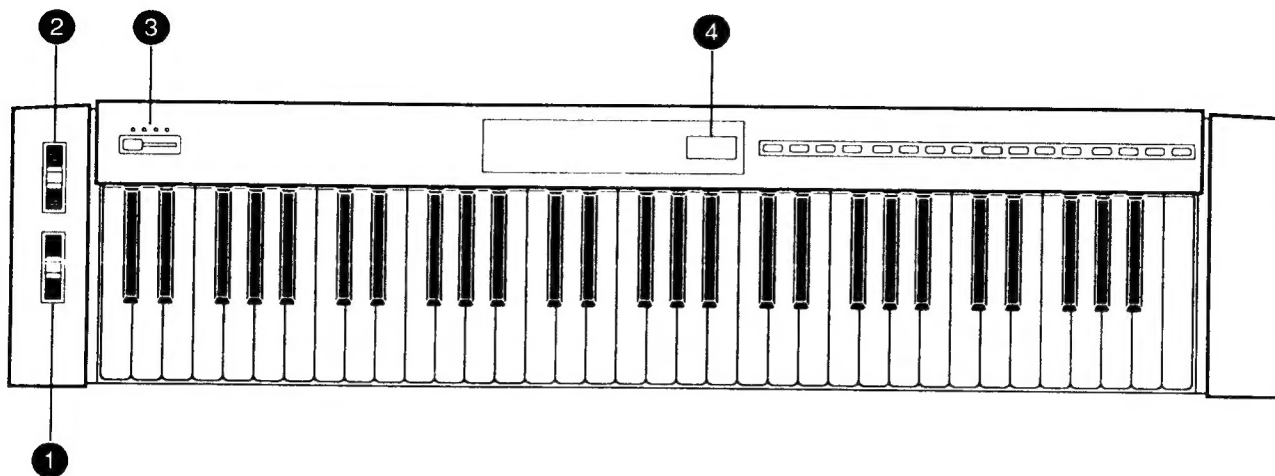
The lithium battery that protects the memory contents while the power to the unit is off is good for more than five years of normal use. We recommend, however, that you have your nearest authorized service representative replace it promptly after five years.



# Let's Play KC10

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# 1. Name of Parts

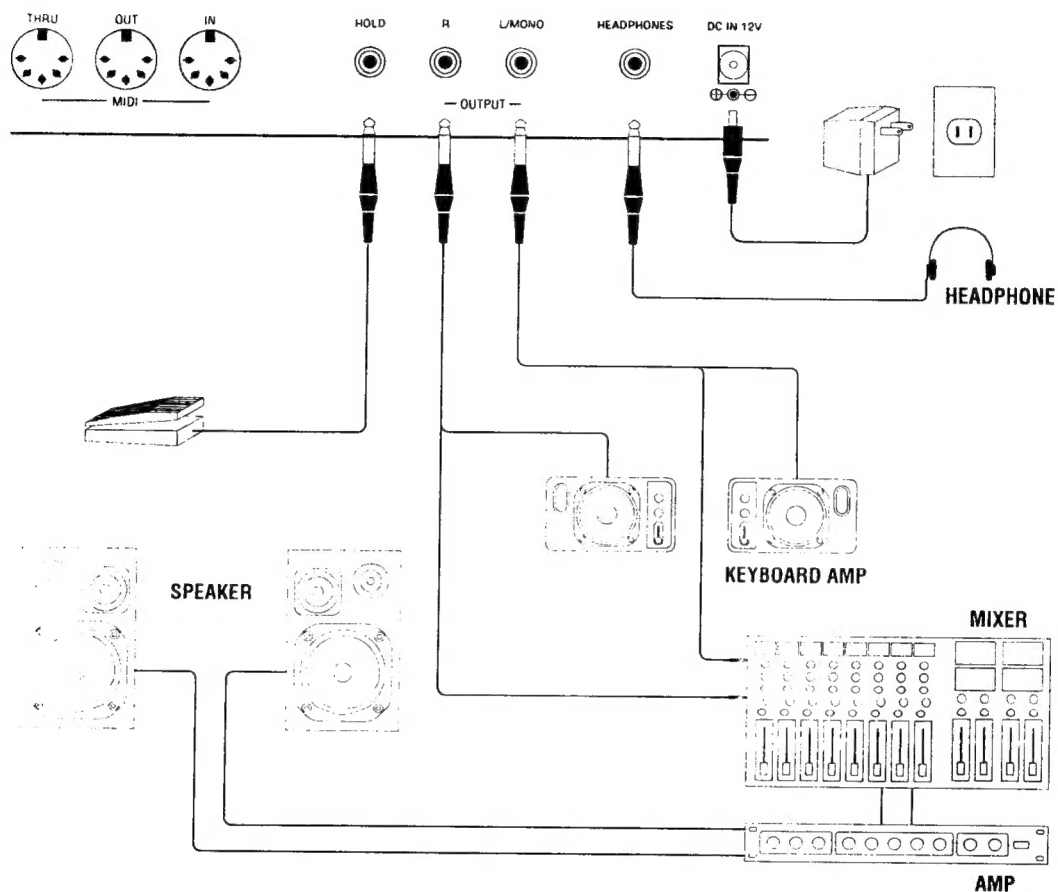


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- |   |  |
|---|--|
| <p><b>1 PITCH BEND WHEEL</b><br/>Controls continuous pitch change. The pitch of an electric guitar may be changed, for example, producing a wider range of sounds.</p> <p><b>2 MODULATION WHEEL</b><br/>Controls continuous modulation of sounds (vibrato).</p> <p><b>3 VOLUME SLIDER</b><br/>Used to adjust the sound output from the PHONES and output (R, L/MONO) jacks.</p> <p><b>4 DISPLAY</b><br/>Indicates the patch number while playing, and the function number and value of parameter (alternately) during editing.</p> <p><b>5 PATCH SELECT SWITCH GROUP 1 (MULTI, SINGLE)</b><br/>Selects between SINGLE and MULTI PLAY modes when selecting patches.</p> <p><b>6 EDIT SWITCH</b><br/>Puts the KC10 into the EDIT mode to allow tones to be modified.</p> <p><b>7 SYSTEM SWITCH</b><br/>Puts the KC10 into the SYSTEM mode.</p> <p><b>8 PATCH SELECT SWITCH GROUP 2 (1~8)</b><br/>In PLAY mode:<br/>Selects a patch number. (See p. 10~12)<br/>During SINGLE editing:<br/>Selects the parameters to be edited. (See p. 22)<br/>During MULTI editing:<br/>Selects a SECTION to be edited. (See p. 31)<br/>In MIDI mode:<br/>Selects the MIDI parameters to be set. (See p. 44)</p> <p><b>9 RHYTHM SWITCH</b><br/>Puts the KC10 into the RHYTHM mode.</p> <p><b>10 RHYTHM SWITCH GROUP (FILLIN, INTRO/ENDING, START/STOP)</b><br/>Used to play RHYTHM patterns. (See p. 12~13)</p> | <p><b>11 POWER SWITCH</b><br/>Turns the instrument's power on and off.</p> <p><b>12 DC IN JACK</b><br/>This jack is used to connect the external power supply.</p> <p><b>13 HEADPHONES JACK</b><br/>The stereo headphone jack is used to monitor the sound of R and L/MONO output.</p> <p><b>14 OUTPUT JACK (R, L/MONO)</b><br/>The output jacks are used to connect the unit to a keyboard amplifier or PA equipment.</p> <p><b>15 HOLD JACK</b><br/>When an kawai F-1 or other foot switch (optional) is connected to this jack, it may be used to sustain the sound.</p> <p><b>16 MIDI jacks (IN, OUT, THRU)</b><br/>These are used to connect equipment to other MIDI devices.</p> |
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## 2. Basic Operation

### A. Connections

- (1) Connect the power adaptor and keyboard amp (or headphone) as shown in below.



**NOTE:** The KC10 has no internal power amp or speakers. In order to obtain sound output, you may either use headphones, or connect it to a keyboard amp or PA system. It is possible to use home radio cassette players or audio amps, but caution should be paid to when the power is turned on and to volume, etc., in order to avoid damage to these appliances.

- (2) Turn the POWER switch on. The unit is now ready to play.
- (3) Turn on the power of amps and other equipment connected to the KC10 after turning the KC10 on, to protect the other equipment.

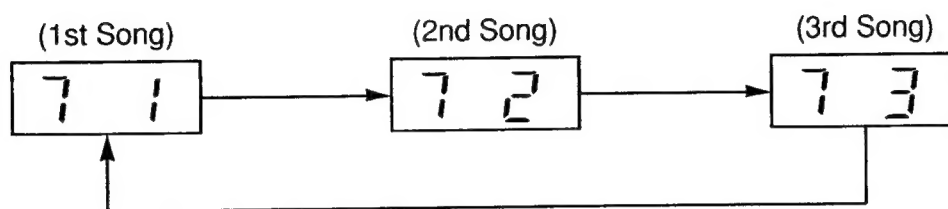
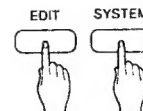


## B. Demonstration Songs

The KC10 contains 3 demonstration songs which show the musical possibilities of KC10. You can hear the songs by following the procedure below:

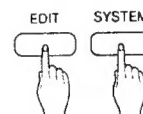
- (1) Press EDIT and SYSTEM switches simultaneously.

The first demonstration song begins to play.

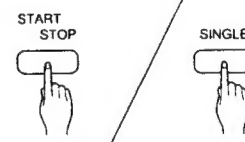


These 3 songs play successively. After the 3rd song ends, the 1st song begins again.

- (2) To skip to the next song before the song's end, press EDIT and SYSTEM switches simultaneously.



- (3) Press START/STOP or SINGLE switch to end the playing.



**NOTE:** Please note that recording these demo songs to tape or other medium is prohibited by law (except for your personal use).

## C. Selecting a Patch

### C-1 SINGLE Patch

In the KC10, each single tone color is referred to as a “SINGLE patch”.

The KC10 has in total 96 SINGLE patches, 64 preset SINGLE patches and 32 user patches.

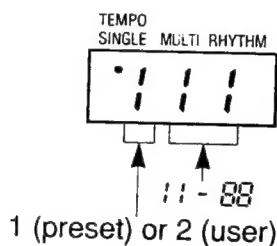
111 - 188	preset SINGLE patches
211 - 248	user SINGLE patches

To select and play a SINGLE patch, use the following procedure.

- (1) First press the SINGLE switch to enter the SINGLE PLAY mode.



The LED dot “SINGLE” lights to show that now the KC10 is in the SINGLE mode, and displays what SINGLE patch is currently selected as follows:

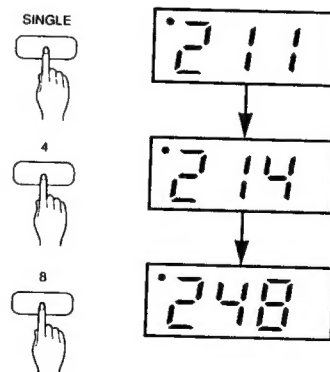
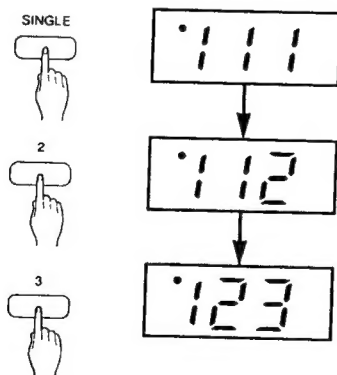


- (2) Select a SINGLE patch number.

- Select “preset”(1) or “user”(2) by pressing SINGLE switch.
- Select a number by pressing two of 1~8 switches successively.

(Ex. 1) To select 123 “LOW PIANO” ...

(Ex. 2) To select 248 “SYN PAD2” ...



- (3) Play the keyboard and listen to the sound of selected SINGLE patch.

## C-2 MULTI Patch

A MULTI patch is structured from up to 4 SINGLE patches. These 4 SINGLE patches are combined in "SECTION 1-4". Pitch, level, transpose, key zone and MIDI receive channel can be set for each SECTION. Using MULTI you can make more colorful and complex sound than only one SINGLE patch.

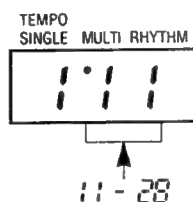
The KC10 has 16 MULTI patches in total( 111- 118, 121- 128).

To select and play a MULTI patch, use the following procedure:

- (1) First press the MULTI switch to enter the MULTI PLAY mode.

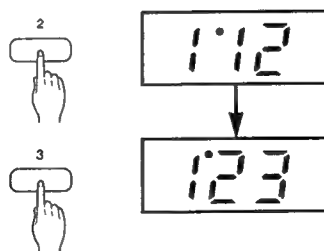


The LED dot "MULTI" lights to show that now the KC10 is in the MULTI mode, and displays what MULTI patch is currently selected as follows:



- (2) Select a MULTI patch number by pressing two of 1 ~ 8 switches successively.

(Ex.) To select 123 "SPLIT 3" ...



- (3) Play the keyboard and listen to the sound of the selected MULTI patch.

MULTI patches contain numerous settings. Pressing a few keys on the keyboard is not enough to allow you to completely determine what of patch settings have been made. It is possible to create a MULTI in which sounds play only in one area of the keyboard, or only via MIDI.

### C-3 RHYTHM Pattern

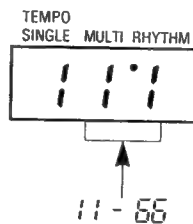
The KC10 contains 36 rhythm patterns. You can play these RHYTHM patterns with intro/ending and fill in.

To select and play a RHYTHM pattern, please take the following procedure.

- (1) Firstly press the RHYTHM switch to enter the RHYTHM PLAY mode.

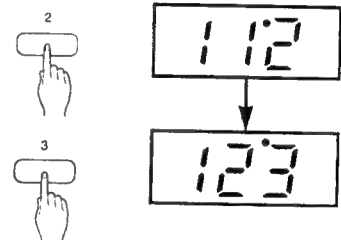


The LED dot "RHYTHM" lights to show that now the KC10 is in the RHYTHM PLAY mode, and displays what RHYTHM pattern is currently selected as follows:



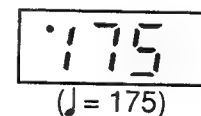
**Note:** In RHYTHM PLAY mode, KC10's keyboard produces the sound of the SINGLE (or MULTI) patch selected before entering RHYTHM mode.

- (2) Select a RHYTHM pattern number.  
Press two of the 1 ~ 6 switches successively.  
(Ex.) To select 123 "SLAP FUNK" ...

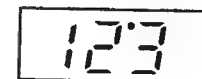


- (3) To change the tempo:

Press the +YES (or -NO) switch to increase (decrease) the tempo.  
The LED shows the tempo now selected.



Pressing RHYTHM switch recalls the RHYTHM pattern number.



**Note:** After selecting a RHYTHM pattern, you can return to SINGLE (or MULTI) PLAY mode by pressing SINGLE (or MULTI) switch.

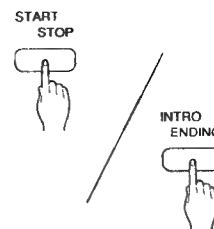
## (4) To start playing the rhythm:

Press START/STOP switch ...

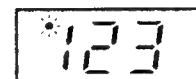
The RHYTHM pattern starts to play normally.

Or press INTRO/ENDING switch ...

The pattern starts with introduction.



During RHYTHM pattern playing, LED dot  
“TEMPO/SINGLE” flashed at the beginning of every bar.



## (5) Press the FILL IN switch to add the fill in pattern.

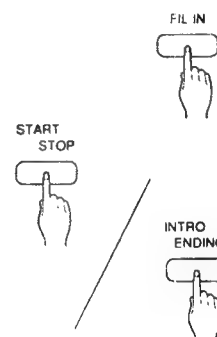
## (6) To stop playing:

Press the START/STOP switch ...

The pattern stops normally.

Or press the INTRO/ENDING switch ...

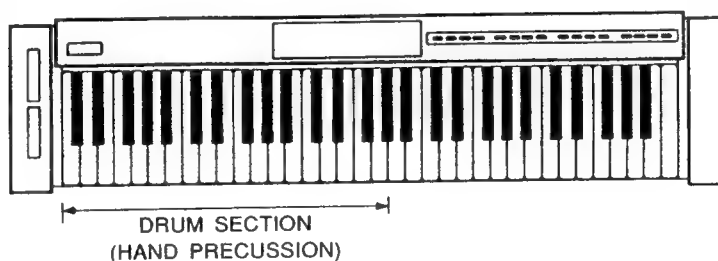
The pattern stops with ending.



## DRUM SECTION (HAND PERCUSSION)

The DRUM SECTION is a separate programmable section of the KC10, independent from any SINGLE or MULTI patch.

Drum sounds are programmed for each note on C1~G3 range of the KC10's keyboard (See p. 58 "DRUM SECTION Key Assignment"). These sounds can be played from the KC10's keyboard, and are also available for use with a sequencer or other MIDI device (See p. 53 "Playing Using A Sequencer/Computer".)



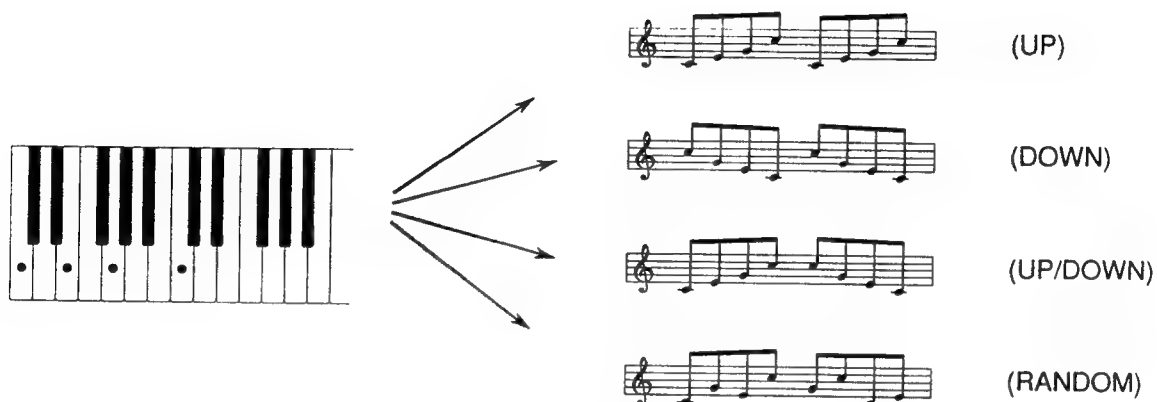
To play the DRUM SECTION from the KC10's keyboard, it is necessary to set "HAND PERCUSSION ON/OFF" to ON. (See p.37 "RHYTHM Edit Parameters".)

**Note:** During the HAND PERCUSSION ON/OFF is ON, the keyboard above G3 produces no sound.  
When you return to SINGLE/MULTI PLAY mode (See p. 10/11), this HAND PERCUSSION operation will be canceled.

## AUTO ARPEGGIATOR

This function allows you to play the arpeggio patterns automatically, only by pressing one chord on KC10's keyboard (range: C1~B2).

(EX.) when you press C chord:



To use this function, it is necessary to set "AUTO ARPEGGIATOR ON/OFF" to ON. (See p. 37~39 "RHYTHM Edit Parameters".)

**Note:** This function is not available under the following circumstance:

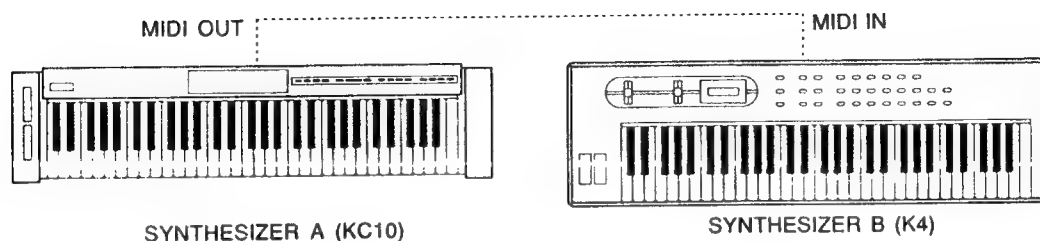
- \* When the HAND PERCUSSION ON/OFF (See above) is set to ON.
- \* In the MULTI PLAY mode.

### 3. Fundamental of MIDI

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The letter MIDI stand for Musical Instrument Digital Interface, an international standard for connecting synthesizers, drum machines and other electronic instruments so that they can exchange performance data. If you use MIDI with your KC10, the following operations will be available.

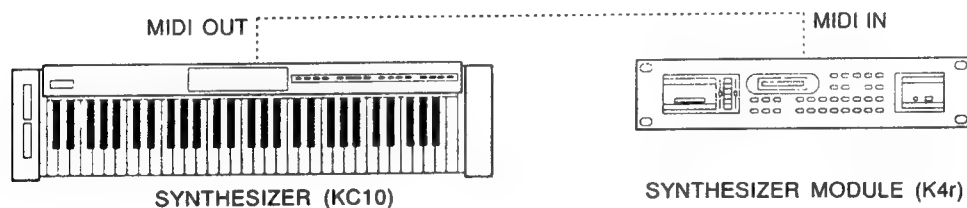
#### (1) Connecting to another synthesizer



When connected as shown in the illustration, you can generate the sound of K4 by playing the keyboard of KC10, because the MIDI data is transmitted from KC10 to K4.

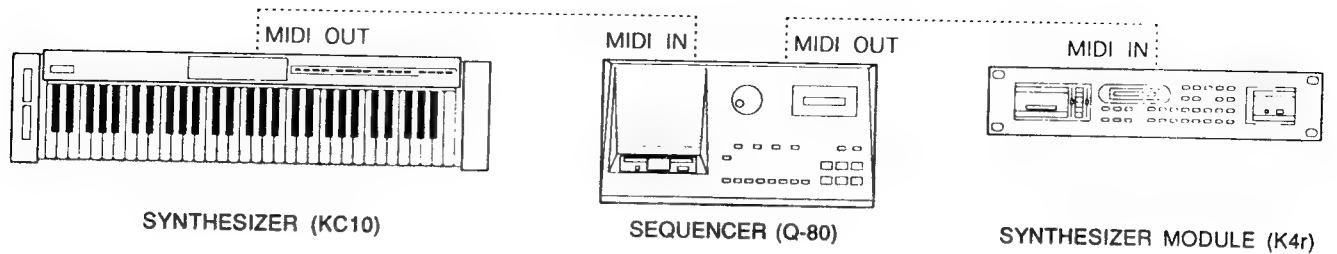
Since tone color can be set separately, you can assembly a wide variety of sound combinations, such as a PIANO tone from the KC10 layered with a STRING tone from the K4 for a thick sound.

#### (2) Connecting to a synthesizer module



Same as (1), you can transmit MIDI data by playing KC10's keyboard to K4r and make sounds from KC10.

### (3) Connecting to a sequencer/synthesizer module



"Sequencer" is the device which allows you to record and playback MIDI data. On the above setting, if you once record MIDI data by playing KC10, you can playback your performance anytime (without playing keyboard again!). And also it is possible to play a synth solo by KC10 with backing ensemble of Q-80 and K4r.

If you want to know about the more detailed knowledge of MIDI, please see the following page "MIDI Information".

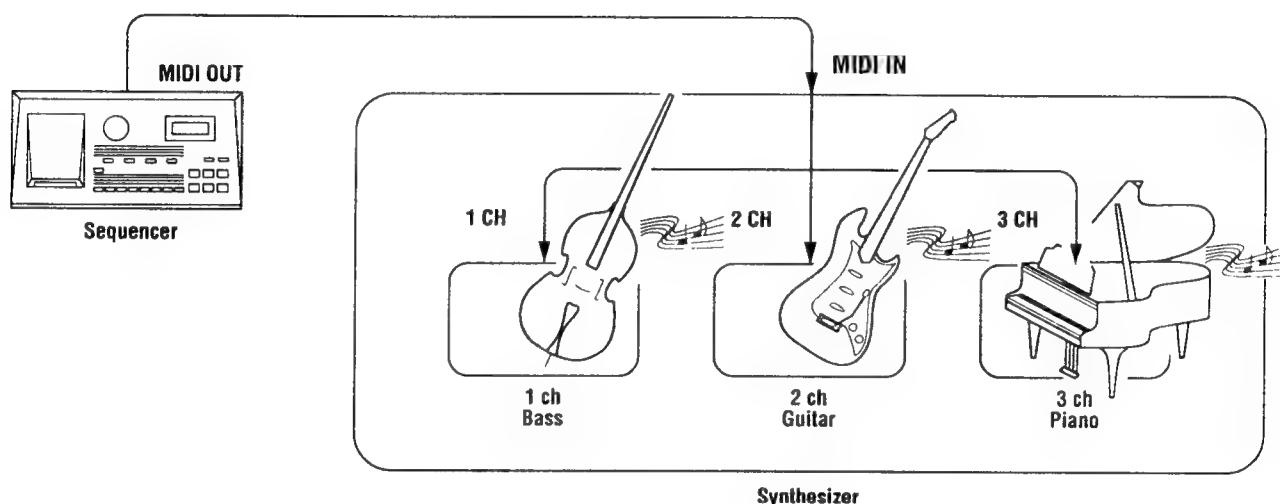


# MIDI Information

## MIDI Channel

With MIDI, any number of instruments may be controlled from a single source. Thus, in order to be able to distinguish one instrument from another, it is possible to assign a channel number from 1-16 to each. When performance data is transmitted, the channel number is transmitted at the head of the information to identify for which machine the information is intended.

This number is called the MIDI channel. When the instrument is one which supports multi timbres, you will want to control each part, so MIDI channels will have to be allotted to each.



## Mode

In addition to the channel on which MIDI information is transmitted, information may also be transmitted in different modes. There are both **POLY** and **MONO** modes, to determine if the performance data received is to be played polyphonically or monophonically. (KC10 operates only in the **POLY** mode.)

Both of these modes may be set for **OMNI ON** or **OMNI OFF**, and when set for **OMNI ON**, information from all MIDI channels may be received and sound produced.

## Note Information

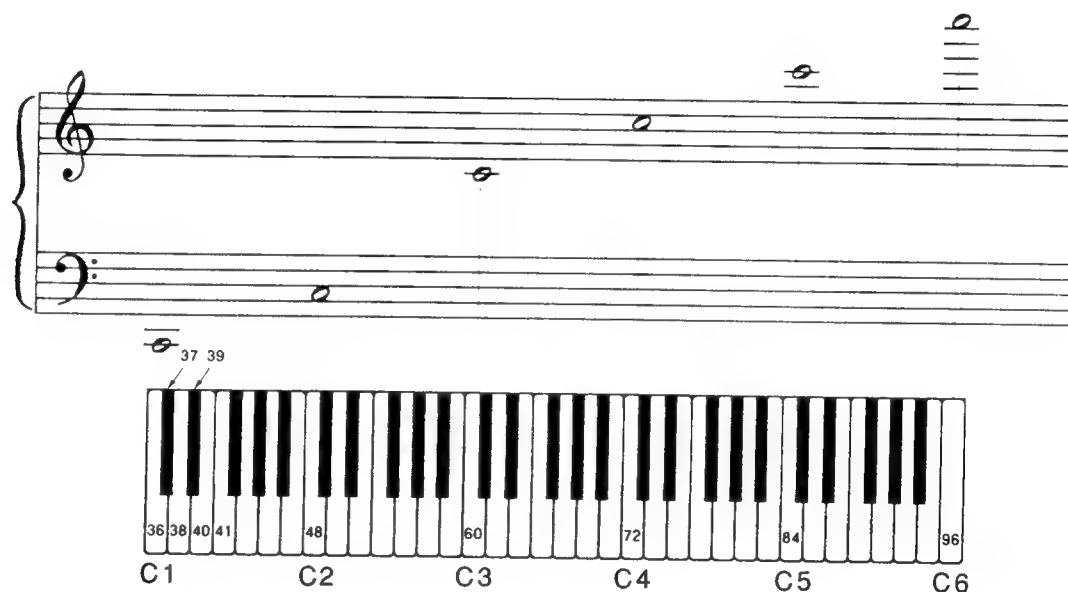
Of the different types of performance data which can be transmitted via MIDI, the most basic is the note message.

Note messages indicate such information as which key has been pressed (NOTE ON, NOTE Number) with how much force (VELOCITY), and when it was released (NOTE OFF).

- **Note number**

In order to enable the control instrument to differentiate between keys when they are played, a number is assigned to each, called a note number. Middle C (C3) is MIDI note number 60, and each note number corresponds to a half tone, or one key on the keyboard.

(MIDI divides the half tones from C-2 to G8 into 128 steps, numbering them in sequence from lowest to highest.)



- **Velocity**

This is a message which tells with how much force a key on the keyboard was pressed (velocity is detected not by the pressure on the key, but by the speed of its movement at the time the NOTE ON message is sent.).

## **Program Change**

---

Most MIDI instruments currently in use allow setting, tones, and other data to be programmed. These programs can be switched by a message from the master instrument. This type of message is called a PROGRAM CHANGE.

Since MIDI standard say only that numbers from 0 to 127 can be used as PROGRAM CHANGE data, the items in the tone memory that correspond to the PROGRAM CHANGE numbers are different for every type of instrument.

## **Control Change**

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Besides information regarding when a key has been pressed and released and so on, volume, vibrato, hold, portament on/off, damper and soft pedal on/off, pan and aftertouch information, etc., are functions which may be handled in many different ways as performance data. These are transmitted as CONTROL CHANGE message.

## **Pitch Bend**

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This is a message which tells just how far the pitch bend wheel has been turned. The maximum amount of pitch bend is usually programmed in the synthesizer's patch data. Therefore, pitch range depth may differ between instruments.

## **Exclusive Message**

---

While MIDI is a standard accepted world-wide, in order to get the most out of the different types of equipment produced by different manufacturers, each produces to some extent, their own independent specifications. These are outside of the specifications prescribed by MIDI, and consist of messages for the transmission and reception of information unique to a particular piece of equipment. Called SYSTEM EXCLUSIVE messages, these may be used to exchange tone data between equipment produced by the same manufacturer and for storing tone data to a computer.



# 2

## Edit the Sound

"Editing" is the creation or alteration of synthesizer tones and settings.

If you want to:

- change the KC10's SINGLE patch sound as you like,
- or to change the structure of MULTI patch's SECTION,
- and to select other setting on RHYTHM patch/AUTO ARRPEGIATOR,

please read this chapter carefully and take your desired operation.

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# 1. SINGLE Patch Editing

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## A. Editing Operation

To edit a SINGLE patch, it is necessary to enter SINGLE EDIT mode by pressing the EDIT switch.

### Basic Operation

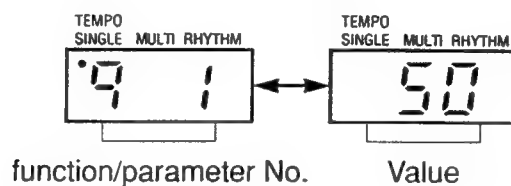
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- (1) Select the SINGLE patch which you want to edit (See p. 10).

- (2) Press the EDIT switch to enter the SINGLE EDIT mode.



The LED shows the function/parameter number and its value alternately.



- (3) Call up the function/parameter by pressing one of the EDIT, WAVE, FREQ, ENV1, ENV2 switches. (See p. 23)



- (4) Change the parameter's value with +YES and -NO switches. (If you have any other parameter to be edited, repeat (3) and (4).)



- (5) Write the edited SINGLE patch (See p. 30).



## B. SINGLE Edit Parameters

There are 5 groups of function/parameter in KC10's SINGLE EDIT mode. So each group consists of function which has a similar character, that you can easily understand what function you should call up to make your desired change on SINGLE patch.

The following chart is the table of all KC10's SINGLE EDIT parameters:

	Function No./Name	Value Range	Ref. p.
EDIT Group	9 1 VOLUME	0 - 63	p. 24
	9 2 KEY FIX	0 or 1	p. 24
	9 3 FIXED KEY NO.	24 - 108	p. 24
	9 4 CHORUS ON/OFF	0 or 1	p. 24
WAVE Group	10 1 WAVE SELECT	1 - 128	p. 25
	10 2 SOLO ON/OFF	0 or 1	p. 25
FREQ Group	11 1 VIBRATO SPEED	0 - 31	p. 25
	11 2 VIBRATO DEPTH	0 - 31	p. 25
	11 3 VIBRATO SHAPE	1 / 2 / 3 / 4	p. 26
	11 4 AUTO BEND TIME	0 - 31	p. 26
	11 5 AUTO BEND DEPTH	±31	p. 26
ENV1 Group	12 1/13 1 LEVEL	0 - 31	p. 27
ENV2	12 2/13 2 ATTACK TIME	0 - 31	p. 28
	12 3/13 3 DECAY TIME	0 - 31	p. 28
	12 4/13 4 SUSTAIN LEVEL	0 - 31	p. 28
	12 5/13 5 RELEASE TIME	0 - 31	p. 29
	12 6/13 6 KS ENVELOPE LEVEL	±15	p. 29
	12 7/13 7 VELOCITY CURVE	1 / 2 / 3 / 4	p. 29

**EDIT Group****9 1****VOLUME**

This controls the whole volume of SINGLE patch.  
The differences in volume between patches are adjusted so as to avoid any unnaturalness when switching between patches.

Value	Effects
0	Minimum Level
63	Maximum Level

**9 2****KEY FIX**

This selects whether pitch is to change depending on the key struck.  
The keys scale normally when OFF (1), but will be fixed at the pitch specified by FIXED KEY NO. when off (0).

Value	Effects
0	ON
1	OFF

**9 3****FIXED KEY NO.**

Fix the pitch of the SINGLE patch to a particular pitch.

Value	Effects
0	C0
108	C7

**9 4****CHORUS ON/OFF**

Selects whether the "chorus" effect is added to the SINGLE sound or not.

Value	Effects
0	OFF
1	ON



## WAVE Group

101

### WAVE

This selects the desired waveform from the 128 waveforms available.

**NOTE:** See WAVE LIST (p.66) for available waveforms.

Value	Effects
1	Wave No. 1
128	Wave No. 128

102

### SOLO ON/OFF

Sets the way the SINGLE patch is to sound, polyphonic or monophonic (SOLO).

**NOTE:** When set to 0, 10-note polyphony is available.

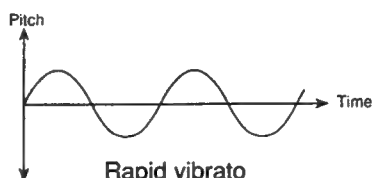
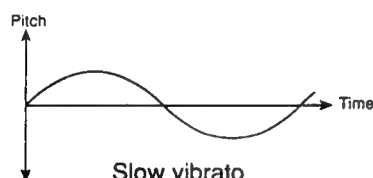
Value	Effects
0	OFF
1	ON

## FREQ Group

111

### VIBRATO SPEED

Sets the vibrato speed.

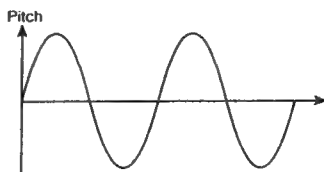
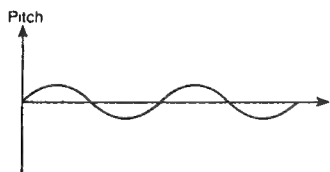


Value	Effects
0	Slow Vibrato
31	Rapid Vibrato

112

### VIBRATO DEPTH

Sets the depth of change of Vibrato pitch variation.

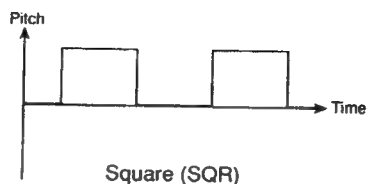
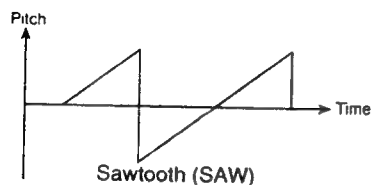


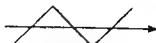
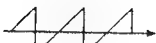

Value	Effects
0	No Vibrato
31	Maximum Vibrato

**NOTE:** The amount of time after a key is pressed until vibrato takes effect can be set with AUTO BEND TIME (114).

**113****VIBRATO SHAPE**

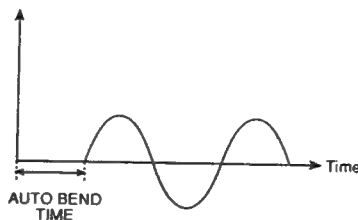
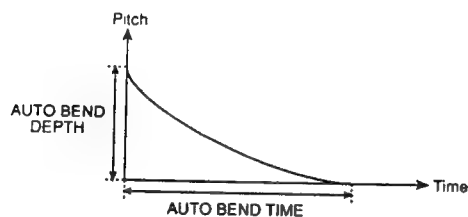
Sets how the pitch is to be shaped.



Value	Effects
1	TRI 
2	SAW 
3	SQR 
4	RND Random variation

**114****AUTO BEND TIME**

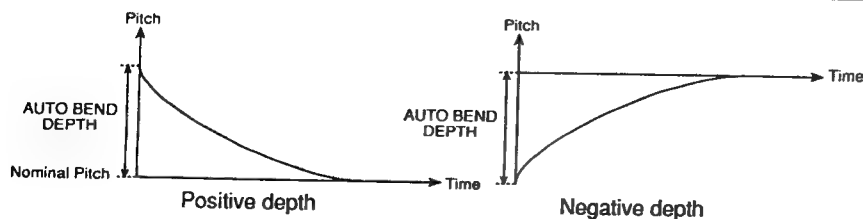
Sets the time for the AUTO BEND (automatic bend) function (See next) and the delay before the start of the vibrato effect (See 112).



Value	Effects
0	No Effect
1	
31	Maximum Period

**115****AUTO BEND DEPTH**

Sets how the pitch alters as each key is struck – the AUTO BEND effect.

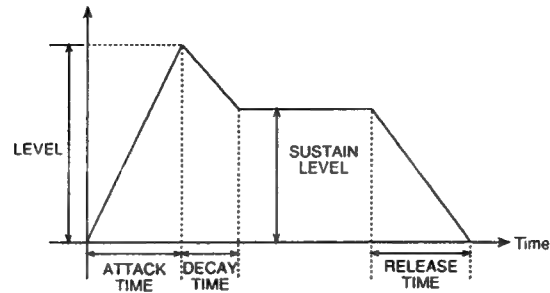


Value	Effects
+31	Pitch drops to nominal value
0	No effect
-31	Pitch rises to nominal value

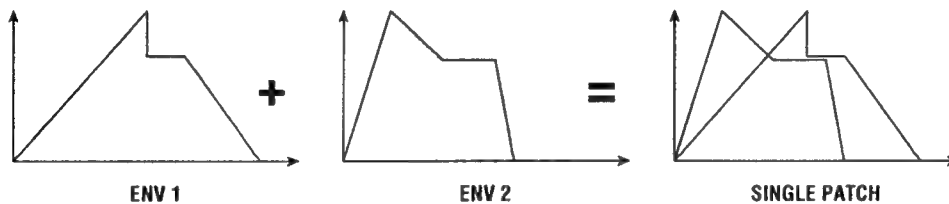
## ENV1 (ENV2) Group

The parameters in this group determine the “envelope”, the way the volume of a sound changes with time.

For example, a note on a piano begins to fade immediately after you strike it, but one on an organ stays at the same volume until you release the key. The graph below defines the five phrases of the envelope:



The KC10 allows you to set 2 different envelope (ENV1 and ENV2) for one SINGLE patch, and make a complex sound by mixing them.



121

131

LEVEL

This adjusts the initial level for each of ENV1 and ENV2.

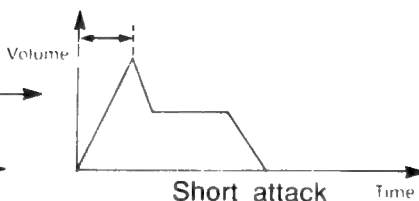
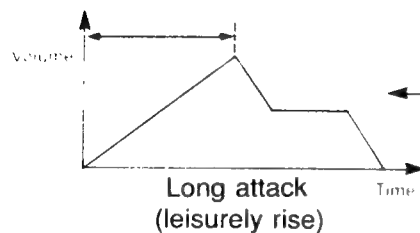
Value	Effects
0	No Output
31	Maximum Level

122

132

**ATTACK TIME**

This sets the time from the start of the sound until the peak volume is reached (for each of ENV1 and ENV2).



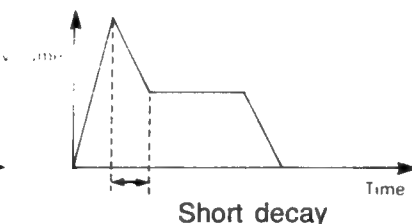
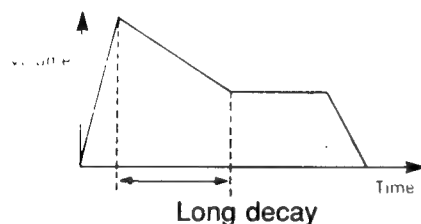
Value	Effects
0	Short Attack
31	Long Attack

123

133

**DECAY TIME**

This sets the time from peak volume to the sustain level (for each ENV).



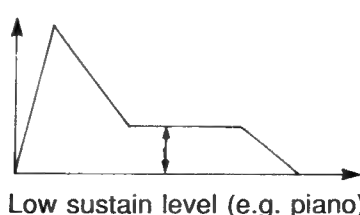
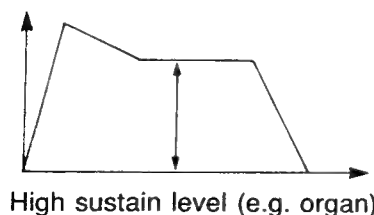
Value	Effects
0	Instantaneous Drop
31	Gradual Drop

124

134

**SUSTAIN LEVEL**

This sets the stable level which will be maintained as long as the key is held down (for each ENV).



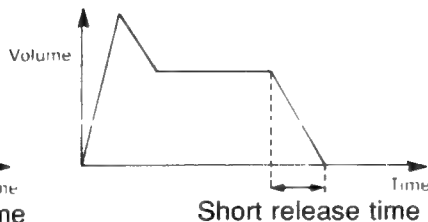
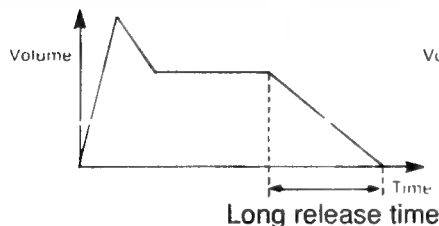
Value	Effects
0	Low Sustain
31	High Sustain

125

135

**RELEASE TIME**

This sets the time from the point when the key is released until the sound disappears (for each ENV)



Value	Effects
0	Short Release
31	Long Release

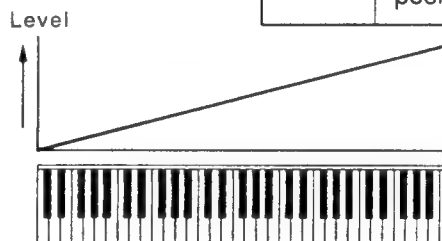
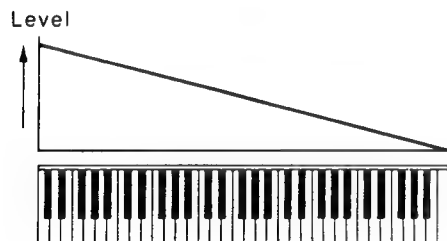
126

136

**KS(KEY SCALING)  
ENVELOPE LEVEL**

This changes the volume level according to the position (high or low note) of the struck key (for each ENV).

Setting a positive value (+1~+15) increases the volume on high position, while a negative value increases on low position.



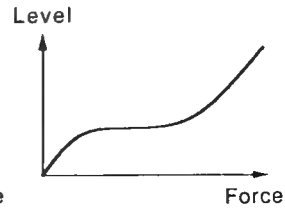
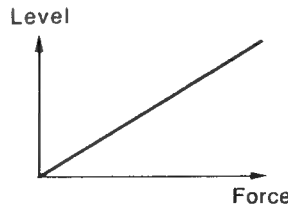
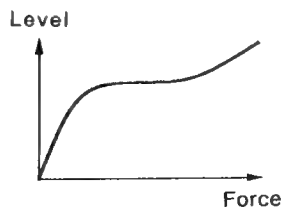
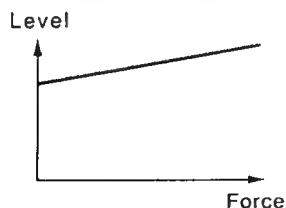
Value	Effects
+15	Increase the volume on high position
0	No effect
-15	Increase the volume on low position

127

137

**VELOCITY CURVE**

You can select the way in which volume is changed by how hard the key is struck, choosing from the following 4 curves.



## C. Writing A Edited SINGLE Patch

If you want to store the edited SINGLE patch, write it to one of 32 user SINGLE patch area with the following procedure.

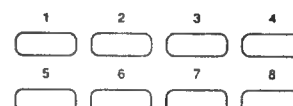
- (1) After finishing editing, press WRITE switch.



LED begins to show the WRITE function number (8 1) and user SINGLE patch number alternately.



- (2) Select one patch number (for storage) using 1 ~ 8 switches.  
(See p.10 "C-1 SINGLE Patch)



- (3) Press WRITE switch again.



LED shows selected patch number and KC10 returns to SINGLE PLAY mode.

**NOTE:** This procedure erases the data previously stored in the selected patch.  
If you want to recall the factory-preset SINGLE patch data, use the RESET procedure  
(See p. 55).

## 2. MULTI Patch Editing

---

### A. Editing Operation

To edit a MULTI patch, it is necessary to enter the MULTI EDIT mode by pressing the EDIT switch.

#### Basic Operation

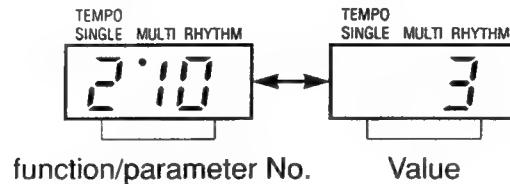
---

(1) Select the MULTI patch you want to edit (See p. 11).

(2) Press the EDIT switch to enter the MULTI EDIT mode.



The LED shows the function/parameter number and its value alternately.



(3) Call up the SECTION and its function/parameter by pressing one of the switches sometimes.  
(See p. 32)



(4) Change the parameter's value with the +YES and -NO switches. (If you have any other SECTION to the edited, repeat (3) and (4).)



(5) Write the edited MULTI patch (See p. 35).



## B. MULTI Edit Parameters

A MULTI patch is a combination of up to 4 SINGLE patches. Each of the 4 SINGLE patches are used in SECTIONs 1 - 4.

MULTI patches have no parameters for creating tones – MULTI EDIT parameters are used to set how the tone of each SECTION is to be played.

The following chart is the table of all MULTI EDIT parameters:

SECTION 1	SECTION 2	SECTION 3	SECTION 4
SECTION PLAY	SECTION PLAY	SECTION PLAY	SECTION PLAY
SINGLE ASSIGN	SINGLE ASSIGN	SINGLE ASSIGN	SINGLE ASSIGN
RECEIVE CHANNEL	RECEIVE CHANNEL	RECEIVE CHANNEL	RECEIVE CHANNEL
TUNE	TUNE	TUNE	TUNE
LEVEL	LEVEL	LEVEL	LEVEL
TRANPOSE	TRANPOSE	TRANPOSE	TRANPOSE
ZONE HI	ZONE HI	ZONE HI	ZONE HI
ZONE LO	ZONE LO	ZONE LO	ZONE LO

MULTI PATCH

Function No./Name	Value	Ref. p.
2*0 SECTION PLAY	0 / 1 / 2 / 3	p. 33
2*1 SINGLE ASSIGN	111 - 248	p. 33
2*2 RECEIVE CHANNEL	1 - 9, 11 - 16	p. 33
2*3 TUNE	±10	p. 33
2*4 LEVEL	0 - 31	p. 34
2*5 TRANPOSE	±12	p. 34
2*6 ZONE HI	36 - 96	p. 34
2*7 ZONE LO	36 - 96	p. 34

Though these parameters are the same for each of SECTIONs 1~4, LED displays the different number to show which SECTION is now edited as follows:

(SECTION 1)	(SECTION 2)	(SECTION 3)	(SECTION 4)
2 10	2 20	2 30	2 40

This chapter explains the details of MULTI EDIT parameters using SECTION 1 as an instance.



**2 10****SECTION PLAY**

Sets the way the SECTION is to be played.

OFF: The SECTION produces no sound.

KYBD: Produces sound only when the keyboard is played.

MIDI: Produces sound only when receiving MIDI data from external MIDI device.

MIX: Produces sound both keyboard and MIDI data.

Value	Effects
0	OFF
1	KYBD
2	MIDI
3	MIX

**2 11****SINGLE ASSIGN**

Selects a SINGLE patch to be played in each SECTION.

Value	Effects
111	SINGLE Patch No. 111
248	SINGLE Patch No. 248

**2 12****RECEIVE CHANNEL**

Sets the MIDI receive channel for each SECTION.

**NOTE:** In this mode you cannot set the value 10, because the channel 10 is fixed for DRUM SECTION.

When you set different MIDI receive channels for each SECTION with this parameter, you can play an ensemble performance using only the KC10 and a sequencer/computer. (See p.53 "Playing using a Sequencer/Computer")

Value	Effects
1	Channel 1
9	Channel 9
11	Channel 11
16	Channel 16

**2 13****TUNE**

This performs fine tuning for SECTION pitch.

You can create a thicker sound by slightly varying the pitch of several SECTIONS with the same tone.

Value	Effects
-10	Semitone Lower
0	Standard Pitch
+10	Semitone Higher

214

LEVEL

Sets the level for each SECTION.

Value	Effects
0	Minimum Level
31	Maximum Level

215

TRANPOSE

This transposes the pitch of the SECTION up and down in half steps.

By layering a SECTION in normal pitch with SECTION transposed by 5 or 12 half steps, you can play harmonies in a 5th or a full octave with one finger.

Setting can be made within a range of two octaves.

Value	Effects
-12	Octave Lower
0	Standard Pitch
+12	Octave Higher

216

ZONE HI

217

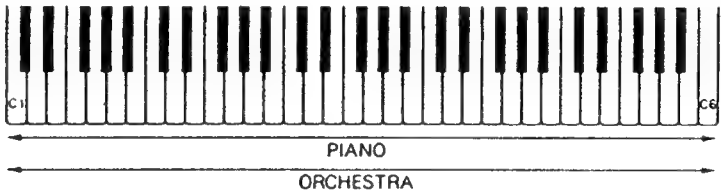
ZONE LO

Set the upper and lower limits for the tone range of the SECTION.

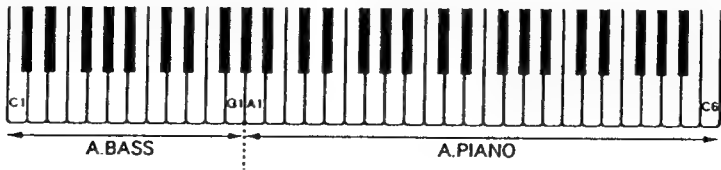
By using these two parameters, a "Layer"(combining two or more sounds into one) or "Split"(dividing a keyboard into several zones, assigning a different sound for each) can be created as follows:

Value	Effects
36	C1
96	C6

(Layer)



(Split)



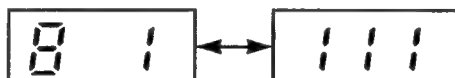
## C. Writing An Edited MULTI Patch

If you want to store the edited MULTI patch, write it one of 16 MULTI patch locations using the following procedure.

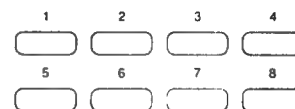
- (1) After finishing editing, press the WRITE switch.



LED begins to show the WRITE function number 8 1 and patch number alternately.



- (2) Select one patch number (for storage) using the 1 ~ 8 switches. (See p.11 "C-2 MULTI Patch")



- (3) Press WRITE switch again.



LED shows selected patch number and KC10 returns to MULTI PLAY mode.

**NOTE:** This procedure erases the data previously stored in the selected patch. If you want to recall the factory-preset MULTI patch data, use the RESET procedure (See p. 55)

### 3. RHYTHM Editing

#### A. Editing Operation

Enter the RHYTHM EDIT mode to change the settings of RHYTHM PLAY mode with the procedure below:

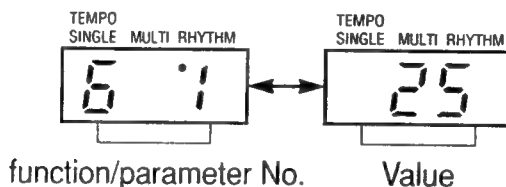
- (1) First press the RHYTHM switch to enter the RHYTHM PLAY mode. (See p.12)



- (2) Press the EDIT switch.



The LED shows the function/parameter number and its value alternately.



- (3) Press EDIT sometimes until the desired function number appears. (See the following parameter chart.)



- (4) Change the parameter's value with +YES and -NO switches. (Repeat (3) and (4) to change all parameters you need.)



- (5) To leave the EDIT mode:

- (a) Press SINGLE switch → returns to SINGLE PLAY mode.



- (b) Press MULTI switch → returns to MULTI PLAY mode.



- (c) Press RHYTHM switch → returns to RHYTHM PLAY mode.



## B. RHYTHM Edit Parameters

Function No./Name	Value Range	Ref. p.
5 1 RHYTHM VOLUME	0 - 31	p. 37
5 2 HAND PERCUSSION ON/OFF	0 or 1	p. 37
5 3 AUTO ARPEGGIATOR ON/OFF	0 or 1	p. 37
5 4 AUTO ARPEGGIATOR FORM	0 / 1 / 2 / 3	p. 38
5 5 AUTO ARPEGGIATOR RANGE	0 / 1 / 2	p. 38
5 6 AUTO ARPEGGIATOR BEAT	0 or 1	p. 38
5 7 AUTO ARPEGGIATOR TONE	0 - 7	p. 38
5 8 AUTO FILL IN ON/OFF	0 or 1	p. 39
5 9 AUTO ARPEGGIATOR VOLUME	0 - 63	p. 39

5 1

### RHYTHM VOLUME

Sets the volume of RHYTHM patterns and DRUM SECTION.

Value	Effects
0	Minimum Volume
31	Maximum Volume

5 2

### HAND PERCUSSION ON/OFF

Sets whether the DRUM SECTION (See p.13) can be played from KC10's keyboard. If on, KC10's keyboard produces the sound of drum/percussion instruments (1 sound for each key).

**NOTE:** See p.58 "DRUM SECTION Key Assignment" to know what sound is assigned to each key.

Value	Effects
0	OFF
1	ON

5 3

### AUTO ARPEGGIATOR ON/OFF

Sets whether the AUTO ARPEGGIATOR function is on or off.

**NOTE:** This parameter will be automatically turned to 0(OFF) when turning the KC10's power OFF and ON again. If the HAND PERCUSSION ON/OFF is set to ON, the AUTO ARPEGGIATOR is always unavailable.

Value	Effects
0	OFF
1	ON

**5 4****AUTO ARPEGGIATOR FORM**

Sets whether AUTO ARPEGGIATOR pattern plays UP, DOWN, or RANDOM.

UP: playing chord notes raising up.  
 DOWN: playing chord notes falling down.  
 UP/DOWN: repeating UP and DOWN.  
 RANDOM: playing chord notes randomly.

Value	Effects
0	UP
1	DOWN
2	UP/DOWN
3	RANDOM

**5 5****AUTO ARPEGGIATOR RANGE**

Sets the note range in which AUTO ARPEGGIATOR plays.  
 (1 octave/2 octave/3 octave)

Value	Effects
0	1 Octave
1	2 Octave
2	3 Octave

**5 6****AUTO ARPEGGIATOR BEAT**

Sets whether AUTO ARPEGGIATOR plays in quarter note or sixteenth note.

Value	Effects
0	Quarter Note
1	Sixteenth Note

**5 7****AUTO ARPEGGIATOR TONE**

Selects a tone color with which AUTO ARPEGGIATOR plays.  
 8 tone colors are available.

0 SYN BASS	2 FRETLESS	4 SPIELUHR	6 CLAVI
1 PIANO 1	3 FAST STRINGS	5 NYLON	7 SHARP BASS

**6 8****AUTO FILL IN ON/OFF**

Sets whether AUTO FILL IN is on or off.  
If on, RHYTHM plays automatically adding fill in pattern every 4 bar (without pressing FILLIN switches).

Value	Effects
0	OFF
1	ON

**6 9****AUTO ARPEGGIATOR VOLUME**

Sets the volume of AUTO ARPEGGIATOR.

Value	Effects
0	Minimum Volume
1	
63	Maximum Volume





# 3

## Other Settings

<b>1. SYSTEM Setting</b> .....	<b>42</b>	<b>DATA DUMP</b> .....	<b>50</b>
TUNE .....	43	ONE PATCH DATA DUMP	
TRANPOSE .....	43	(SINGLE/MULTI) .....	50
BENDER RANGE .....	43	SINGLE DATA DUMP	
<b>2. MIDI Setting</b> .....	<b>44</b>	(ALL PATCHES) .....	51
MIDI RCV Parameters .....	45	MULTI DATA DUMP	
RECEIVE CHANNEL .....	45	(ALL PATCHES) .....	51
OMNI ON/OFF .....	45	DRUM DATA DUMP .....	52
RECEIVE PROGRAM CHANGE .....	46	<b>3. Playing Using A Sequencer/Computer</b> ....	<b>53</b>
RECEIVE PITCH BEND .....	48	<b>4. RESET Operation</b> .....	<b>55</b>
RECEIVE MODULATION .....	48	<b>5. TROUBLESHOOTING</b> .....	<b>56</b>
RECEIVE VELOCITY .....	48		
RECEIVE EXCLUSIVE .....	48		
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TRANSMIT PROGRAM CHANGE .....	49		
TRANSMIT PITCH BEND .....	49		
TRANSMIT MODULATION .....	49		
TRANSMIT HOLD .....	50		

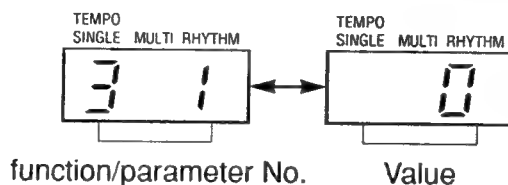
# 1. SYSTEM Setting

In this SYSTEM mode you can set the values that affect the entire KC10 unit.

To set or change the SYSTEM setting, it is necessary to enter SYSTEM mode.

- (1) Press the SYSTEM switch to enter the SYSTEM mode.

The LED shows the function/parameter number and its value alternately.



- (2) Press SYSTEM again until the desired function number appears.

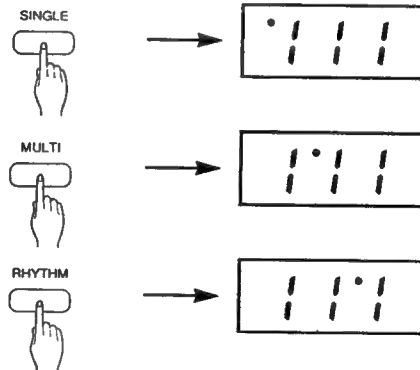


- (3) Change the parameter's value with +YES and -NO switches. (Repeat (3) and (4) to change all parameters you need.)



- (4) To leave the SYSTEM mode:

- (a) Press SINGLE switch  
→ returns to SINGLE PLAY mode.
- (b) Press MULTI switch  
→ returns to MULTI PLAY mode.
- (c) Press RHYTHM switch  
→ returns to RHYTHM PLAY mode.



3 1

**SYSTEM TUNE**

Adjusts the KC10's master tuning.

Value	Effects
-10   0   +10	Semitone Lower
	Standard Pitch
	Semitone Higher

**NOTE:** Turning the KC10's power off resets the TUNE value to 0 (standard pitch).

3 2

**SYSTEM TRANSPOSE**

Shifts the pitch of all notes up or down in semitone increments.

Value	Effects
-12   0   +12	Octave Lower
	Standard Pitch
	Octave Higher

3 3

**BENDER RANGE**

Sets the amount of pitch bend when using PITCH BEND wheel.

Value	Effects
0   7	No effect
	Range of 7 semitones

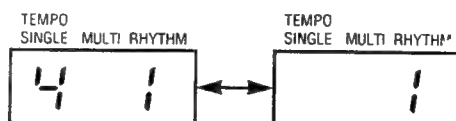
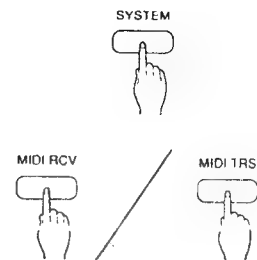
## 2. MIDI Setting

To use the KC10 with other external MIDI equipment, set the KC10's MIDI function as necessary.  
Use MIDI RCV (receive) and MIDI TRS (transmit) mode to set these parameters.

(1) Enter **SYSTEM** mode. (See p. 42)

(2) Press **MIDI RCV** or **MIDI TRS** switch to enter the **MIDI RCV (or TRS) MODE**.

The LED shows the function/parameter number and its value alternately.



(3) Press **MIDI RCV (TRS)** again until the desired function number appears.  
(See the following parameter chart.)

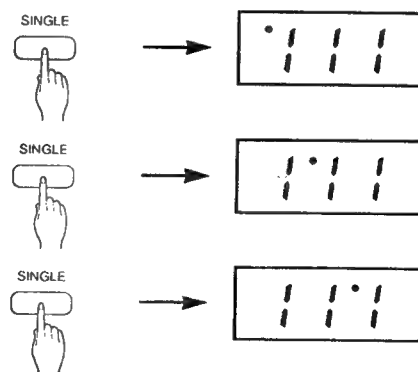


(4) Change the parameter's value with **+YES** and **-NO** switches.  
(repeat (3) and (4) to change all parameters you need.)



(5) To leave the **MIDI RCV (TRS)** mode:

- Press **SINGLE** switch  
→ returns to **SINGLE PLAY** mode.
- Press **MULTI** switch  
→ returns to **MULTI PLAY** mode.
- Press **RHYTHM** switch  
→ returns to **RHYTHM PLAY** mode.



	Function No./Name	Value Range	Ref. p.
MIDI RCV Parameters	4 1 RECEIVE CHANNEL	1 - 9, 11 - 16	p. 45
	4 2 OMNI ON/OFF	0 or 1	p. 45
	4 3 RECEIVE PROGRAM CHANGE	0 / 1 / 2	p. 46 - 47
	4 4 RECEIVE PITCH BEND	0 or 1	p. 48
	4 5 RECEIVE MODULATION	0 or 1	p. 48
	4 6 RECEIVE VELOCITY	0 or 1	p. 48
	4 7 RECEIVE EXCLUSIVE	0 or 1	p. 48
MIDI TRS Parameters	5 1 TRANSMIT CHANNEL	1 - 16	p. 49
	5 2 TRANSMIT PROGRAM CHANGE	0 or 1	p. 49
	5 3 TRANSMIT PITCH BEND	0 or 1	p. 49
	5 4 TRANSMIT MODULATION	0 or 1	p. 49
	5 5 TRANSMIT HOLD	0 or 1	p. 50
	5 6 ONE PATCH DATA DUMP (SINGLE/MULTI)	—	p. 50
	5 7 ALL SINGLE DATA DUMP	—	p. 51
	5 8 ALL MULTI DATA DUMP	—	p. 51
	5 9 DRUM DATA DUMP	—	p. 52

## MIDI RCV Parameters

4 1

### RECEIVE CHANNEL

Sets the MIDI channel(1-16) on which the KC10 receives MIDI data from external equipment.

**NOTE:** In this function you cannot set the value 10, because the channel 10 is fixed for DRUM SECTION. The SECTIONs in a MULTI patch receives MIDI data on the channel set in MULTI edit. (See p.33)

Value	Effects
1	Channel 1
9	Channel 9
11	Channel 11
16	Channel 16

4 2

### OMNI ON/OFF

Selects OMNI (See p.17) on or off.

If OMNI is on, data received on any channel will be received and played in SINGLE mode.

**NOTE:** Independently from this OMNI setting, the DRUM SECTION sound will be always played when receiving MIDI data on channel 10.

Value	Effects
0	OFF
1	ON

4 3

**RECEIVE PROGRAM CHANGE**

Selects whether a PROGRAM CHANGE is to be recognized.

The correspondance between KC10's SINGLE/MULTI patch numbers and PROGRAM CHANGE numbers are as the chart shows:

OFF: All data will be ignored.

NORM: Switches between SINGLE patches (0 to 95) and MULTI patches (96 to 111).

SECT: Remains in MULTI mode and switches between SINGLE patches within the 4 MULTI patch SECTIONS which have matching MIDI channels.

Value	Effects
0	OFF
1	NORM
2	SECT

		1	2	3	4	5	6	7	8
SINGLE (preset)	11	0	1	2	3	4	5	6	7
	12	8	9	10	11	12	13	14	15
	13	16	17	18	19	20	21	22	23
	14	24	25	26	27	28	29	30	31
	15	32	33	34	35	36	37	38	39
	16	40	41	42	43	44	45	46	47
	17	48	49	50	51	52	53	54	55
	18	56	57	58	59	60	61	62	63
SINGLE (user)	21	64	65	66	67	68	69	70	71
	22	72	73	74	75	76	77	78	79
	23	80	81	82	83	84	85	86	87
	24	88	89	90	91	92	93	94	95
MULTI	11	96	97	98	99	100	101	102	103
	12	104	105	106	107	108	109	110	111

When you play a MULTI patch with a sequencer or computer, setting "2"(SECT) allows you to change the SECTION's SINGLE assignment automatically while playing a song.

(Example)

If you want to change the SECTION 4(MIDI RECEIVE CHANNEL: 4) from 111 "STRING VOICE" to 123 "LOW PIANO" ....

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E. PIANO	BRASS	STRING VOICE
MIDI CH : 1	MIDI CH : 2	MIDI CH : 3	MIDI CH : 4

Send PROGRAM CHANGE number  
"10" from a sequencer/computer  
according to MIDI transmit channel 4.

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E. PIANO	BRASS	LOW PIANO

**NOTE:** When KC10 receives a PROGRAM CHANGE message according to MIDI channel 10, it always switches between RHYTHM patterns 111 – 166 (under the correspondance shown in the below chart) unrelated to this  $\frac{4}{3}$  function.

	1	2	3	4	5	6
11	0	1	2	3	4	5
12	6	7	8	9	10	11
13	12	13	14	15	16	17
14	18	19	20	21	22	23
15	24	25	26	27	28	29
16	30	31	32	33	34	35

4 4

**RECEIVE PITCH BEND**

Selects whether PITCH BEND data is to be recognized.

Value	Effects
0	OFF
1	ON

4 5

**RECEIVE MODULATION**

Selects whether MODULATION data is to be recognized.

Value	Effects
0	OFF
1	ON

4 6

**RECEIVE VELOCITY**

Selects whether VELOCITY data is to be recognized.

Value	Effects
0	OFF
1	ON

4 7

**RECEIVE EXCLUSIVE**

Selects whether EXCLUSIVE data is to be recognized.

Value	Effects
0	OFF
1	ON



## MIDI TRS Parameters

5 1

### TRANSMIT CHANNEL

Sets the MIDI channel (1-16) on which the KC10 transmits MIDI data.

Value	Effects
1	Channel 1
16	Channel 16

5 2

### TRANSMIT PROGRAM CHANGE

Selects whether a PROGRAM CHANGE data is to be transmitted.

**NOTE:** When selecting on, KC10 can transmit PROGRAM CHANGE data to connected external equipment, by selecting a SINGLE or MULTI patch from the front panel. (See p. 10 or 11)

Value	Effects
0	OFF
1	ON

5 3

### TRANSMIT PITCH BEND

Selects whether PITCH BEND data is to be transmitted.

Value	Effects
0	OFF
1	ON

5 4

### TRANSMIT MODULATION

Selects whether MODULATION data is to be transmitted.

Value	Effects
0	OFF
1	ON

5 5

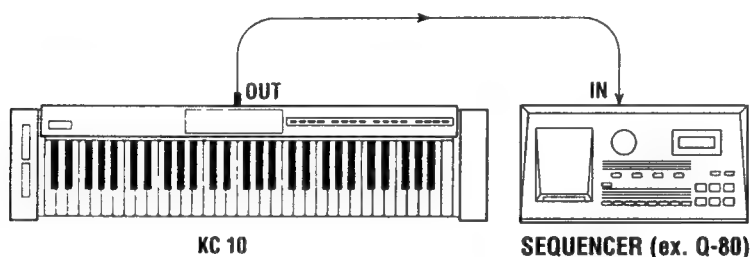
**TRANSMIT HOLD**

Selects whether HOLD data is to be transmitted.

Value	Effects
0	OFF
1	ON

**DATA DUMP**

The KC10 can transmit/receive its SINGLE/MULTI patch data and DRUM SECTION data to/from another external MIDI device. If you use a MIDI sequencer (ex. KAWAI Q-80) as a MIDI data recorder, you can store your original patch data on it with the following "DATA DUMP" procedure.



5 6

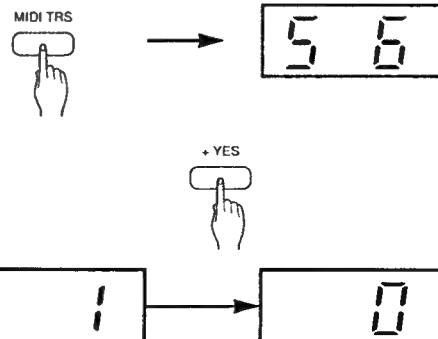
**ONE PATCH DATA DUMP (SINGLE/MULTI)**

Transmits the data of the one patch currently selected.

**Procedure**

- (1) Select a SINGLE or MULTI patch to be transmitted (in SINGLE/MULTI PLAY mode – See p. 10 / 11)
- (2) Enter the SYSTEM mode, and call the function <5 6> by pressing 6 switch several times.
- (3) Press +YES switch.

The LED indicates the value 1 during transmitting, and shows 0 after it.

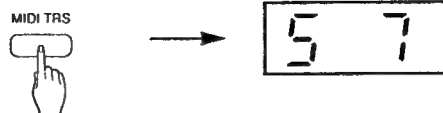


**5 7****ALL SINGLE DATA DUMP**

Transmits the data of 32 user SINGLE patches at once.

**Procedure**

- (1) Enter SYSTEM mode, and call the function <5 7> by pressing 6 switch repeatedly.



- (2) Press +YES switch.



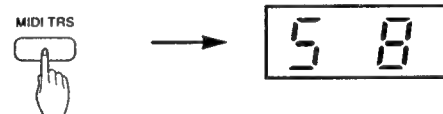
The LED indicates the value *i* during transmitting, and shows 0 after it.

**5 8****ALL MULTI DATA DUMP**

Transmits the data of 16 MULTI patches at once.

**Procedure**

- (1) Enter SYSTEM mode, and call the function <5 8> by pressing 6 switch several times.



- (2) Press +YES switch.



The LED indicates the value *i* during transmitting, and shows 0 after it.



5 9

## DRUM DATA DUMP

Transmits the data of DRUM SECTION key assignment..

### Procedure

(1) Enter SYSTEM mode, and call the function <5 9> by pressing 6 switch repeatedly.

MIDI TRS



5 9

(2) Press +YES switch.

+YES



The LED indicates the value *i* during transmitting, and shows 0 after it.

1



0

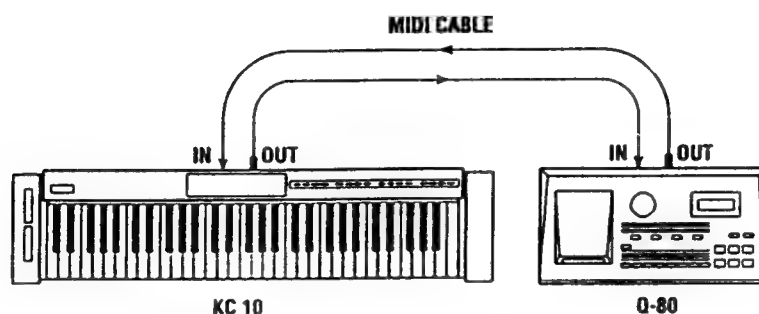
### 3. Playing Using A Sequencer/Computer

With the MULTI mode, the KC10 can function as a synthesizer and drum sound source with up to 4 (5 using DRUM SECTION) parts. This means that an extremely simple setup such as KC10 and a MIDI sequencer (ex. Kawai Q-80) or computer can produce an extensive range of sounds.

Let's use the procedure shown below to actually connect a MIDI sequencer for performance.

#### A. MIDI Sequencer Connection

In this example, a Kawai Q-80 is used as a sequencer. Connect it to the KC10 as shown in the illustration.



**NOTE:** Set your sequencer to ECHO THRU to hear sound from the KC10 while playing the keyboard.

#### B. MULTI Setting

Decide what SECTIONs will be played, and what tones and MIDI channels they will use.

Here we will use the MULTI patch No. 128 "MANUAL" which is preset.

SECTION 1	SECTION 2	SECTION 3	SECTION 4
BASS	E.PIANO	BRASS	STRINGS
MIDI CH : 1	MIDI CH : 2	MIDI CH : 3	MIDI CH : 4

**NOTE:** Set the "HAND PERCUSSION ON/OFF" (See p. 37) to OFF (0).

---

## C. Recording

- (1) Set the KC10's MIDI TRANSMIT channel "1". (See p. 49)
- (2) Play the KC10's keyboard, and then you will hear the BASS sound.
- (3) Change the TRS channel to "2"      – you can play the E.PIANO sound.  
And after change to "3"      – you can play the BRASS sound.  
And after change to "4"      – you can play the STRINGS sound.  
And after change to "10"      – you can play the sound of DRUM SECTION.
- (4) Start the recording to the sequencer with changing MIDI TRS channel and sequencer's recording tracks.

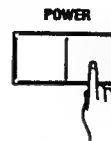
**NOTE:** When recording, you should be sure not to use more notes simultaneously than the KC10's max polyphony (MULTI patch: 10, DRUM SECTION: 4).

## 4. RESET Operation

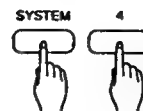
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If you want to recall the factory-preset SINGLE/MULTI patch data, use the following RESET procedure.

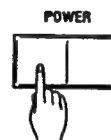
(1) Turn the KC10's power off.



(2) Hold down the SYSTEM switch and 4 switch.



(3) Turn the power on.



This operation recalls the factory-preset setting of:

- 32 user SINGLE patch data
- 16 MULTI patch data
- All RHYTHM parameters
- All SYSTEM parameters (including MIDI TRS & RCV)

**NOTE:** If you want to preserve your original patch data, write all the parameter values down on "SINGLE/MULTI parameter chart" (p.59), or else store the data onto your sequencer/computer using the DATA DUMP operation (See p. 50 ~ 52).

## 5. TROUBLESHOOTING

Since the KC10 is equipped with a wide variety of functions, depending on the settings, it may not operate as expected. Also, sound may not be output due to connected amplifiers or other equipment. This chart explains troubleshooting for these types of problems.

PROBLEM	POSSIBLE CASE	PAGE
No Sound	Is the VOLUME too low?	p. 7
	Adjust the volume on the KC10 or any connected amplifiers or other equipment.	p. 8
	Can sound be heard through headphone when connected? If sound is heard, the problem cause may be with connected equipment or cords. Check connections.	p. 8
	(When in the SINGLE or MULTI PLAY mode) Is the SINGLE's level or SECTION's volume too low?	p. 24 / 34
	(When in the MULTI PLAY mode) Is the SECTION PLAY mode set for OFF(0)/MIDI(3)?	p. 33
Sound is distorted	Is the connection to the amplifier's IN secure?	p. 8
Pitch is out of tune	Are TRANSPOSE and TUNE set correctly?	p. 43
	If the pitch of particular patch is out of tune, check the parameter setting for that patch.	p. 33 / 34
No chord produced	Is the SOLO ON/OFF set ON?	p. 25
MIDI data cannot be transmitted or received correctly	Are the MIDI functions for the transmitting and receiving equipment set correctly?	p. 44 - 52



# APPENDICES

## 1. PRESET SOUND CHART

### SINGLE – 64 preset patches

	1	2	3	4	5	6	7	8
1:1X	STRING VOICE	SYN BRASS	PIANO 1	CONDENCER	NORM VOICE	SYN BASS	E. ORGAN	W. BASS/PIANO
1:2X	NORM STRING	AC BRASS	LOW PIANO	BELLS	FLUTE	CONTRABASS	Bee 52	STRINGS/BRASS
1:3X	PIANO STRING	SQR LEAD	BRIGHT PIANO	RHODOS	ALTO	FRETLESS	CHURCH ORGAN	E. BASS/E. PIANO
1:4X	FAT STRINGS	OCT BRASS	SPINETT	SPIELUHR	RECORDER	NYLON	HARPO	SYN BASS/STRINGS
1:5X	SPACE STRINGS	SAW LEAD 1	WURL EP	WATER BELL	OBOE	GUJAR/BASS	SITAR	E. BASS/CLAVI
1:6X	FAST STRINGS	LIPS	PIANO 2	MALLET	TENOR SAX	SEQ BASS	BANJO	SYN BASS/VOICE
1:7X	OCT STRINGS	BRASS VOICE	CLAVI	WATER DANCE	TIN WHISTLE	SHARP BASS	HARMONICA	JIVE CHIMES
1:8X	WATER DREAM	BRASS STRINGS	STEELY GTR	PALLAS	CHA CHA	PULL BASS	WARM BASS	LUCY

### SINGLE – 32 user patches (default)

	1	2	3	4	5	6	7	8
2:1X	HITER	RHODOBRASS	NAIL BOX	DC EP	11 cc	W. BASS 1	TIN DRUM	POP LEAD
2:2X	ALT STRINGS	SAW LEAD 2	PIANO 3	XYLOPHONE	PAN FLUTE	SLAP BASS	FLAGIOLET	SYN PAD 1
2:3X	VIOLIN	SAW LEAD 3	KNOCK PIANO	BELL	SPACE VOX	MUTE RELEASE	SEQ PLUCK 1	ACCORDION
2:4X	STRINGS>VOX	SHARP LEAD	PIANO 4	STEELDRUM	CLARINET	FUZZ GT	SEQ PLUCK 2	SYN PAD 2

### MULTI patches (default)

	1	2	3	4	5	6	7	8
1:1X	DETUNED EP	PIANO DETUNE	PIANO/STRINGS	BRASS LAYER	E. PIANOSTR	BELLVOICE	MIDI 1	MIDI 2
1:2X	SPLIT 1	SPLIT 2	SPLIT 3	SPLIT 4	SPLIT 5	SPLIT 6	SPLIT 7	MANUAL

### RHYTHM patterns

	1	2	3	4	5	6
1:1X	METAL	DANCE	BLUES	BOSSANOVA	LIGHT SAMBA	POP ROCK
1:2X	JAZZ	50's ROCK	SLAP FUNK	SLOW ROCK	JAZZ WALTZ	POPS
1:3X	EURO FUNK	LATIN	ROCK HOUSE	HOUSE 1	HOUSE 2	MID ROCK 1
1:4X	HEAVY ROCK	SHUFFLE ROCK	MEDIUM ROCK 1	J.B SOUL	TECHNO FUNK	OLD FUNK
1:5X	PY RHYTHM	REGGAE	MID ROCK 2	JACKSON BEAT	POP DANCE	SHUFFLE ROCK 2
1:6X	FUSION	ROCK 1	ROCK 2	MODERN ART	MEDIUM ROCK 2	AFRO

## 2. DRUM SECTION - Key Assignment

	KEY NAME	NOTE NO.	INSTRUMENT
	C1	36	Bass Drum
	C#1	37	Rimshot
	D1	38	Snare Drum 1
	D#1	39	Hand Clap
	E1	40	Snare Drum 2
	F1	41	Low Tom
	F#1	42	Closed High Hat 1
	G1	43	Low Tom
	G#1	44	Closed High Hat 2
	A1	45	Mid Tom
	A#1	46	Open High Hat
	B1	47	Mid Tom
	C2	48	High Tom
	C#2	49	Side Cymbal 1
	D2	50	High Tom
	D#2	51	Top Cymbal
	E2	52	Side Cymbal 2
	F2	53	African Bell
	F#2	54	Tambourine
	G2	55	Splash
	G#2	56	High Cowbel
	A2	57	Side Cymbal 3
	A#2	58	Low Cowbel
	B2	59	Agogo
	C3	60	High Bongo
	C#3	61	Low Bongo
	D3	62	Shaker
	D#3	63	High Conga
	E3	64	Low Conga
	F3	65	High Timbale
	F#3	66	Low Timbale
	G3	67	Claves

### 3. SINGLE/MULTI Edit Parameters (Blank Chart)

#### SINGLE patch

	function name	value
EDIT	9 1 VOLUME	
	9 2 KEY FIX	
	9 3 FIXED KEY NO.	
	9 4 CHORUS ON/OFF	
WAVE	10 1 WAVE SELECT	
	10 2 SOLO ON/OFF	
FREQ	11 1 VIBRATO SPEED	
	11 2 VIBRATO DEPTH	
	11 3 VIBRATO SHAPE	
	11 4 AUTO BEND TIME	
	11 5 AUTO BEND DEPTH	
ENV1	12 1 LEVEL	
	12 2 ATTACK TIME	
	12 3 DECAY TIME	
	12 4 SUSTAIN LEVEL	
	12 5 RELEASE TIME	
	12 6 KS ENVELOPE LEVEL	
	12 7 VELOCITY TABLE	
ENV2	13 1 LEVEL	
	13 2 ATTACK TIME	
	13 3 DECAY TIME	
	13 4 SUSTAIN LEVEL	
	13 5 RELEASE TIME	
	13 6 KS ENVELOPE LEVEL	
	13 7 VELOCITY CURVE	

#### MULTI patch

	function name	value
SECTION 1	2 10 SECTION PLAY	
	2 11 SINGLE ASSIGN	
	2 12 RECEIVE CHANNEL	
	2 13 LEVEL	
	2 14 TUNE	
	2 15 TRANSPOSE	
	2 16 ZONE LO	
SECTION 2	2 17 ZONE HI	
	2 20 SECTION PLAY	
	2 21 SINGLE ASSIGN	
	2 22 RECEIVE CHANNEL	
	2 23 LEVEL	
	2 24 TUNE	
	2 25 TRANSPOSE	
SECTION 3	2 26 ZONE LO	
	2 27 ZONE HI	
	2 30 SECTION PLAY	
	2 31 SINGLE ASSIGN	
	2 32 RECEIVE CHANNEL	
	2 33 LEVEL	
	2 34 TUNE	
SECTION 4	2 35 TRANSPOSE	
	2 36 ZONE LO	
	2 37 ZONE HI	
	2 40 SECTION PLAY	
	2 41 SINGLE ASSIGN	
	2 42 RECEIVE CHANNEL	
	2 43 LEVEL	
	2 44 TUNE	
	2 45 TRANSPOSE	
	2 46 ZONE LO	
	2 47 ZONE HI	



## 4-3. BLOCK SINGLE DATA DUMP

This message is transmitted from KC10 when system TRS parameter (5-7) is set, or after receiving the ALL SINGLE DATA REQ.

See SINGLE DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	00H	single/multi
Sub status 2	01000000	40H	all singles
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
.	.		.
.	.		.
data	0xxxxxxx		"211" s20 data
data	0xxxxxxx		"211" s21 data
data	0xxxxxxx		"211" s22 data
data	0xxxxxxx		"211" s23 data
data	0xxxxxxx		"212" s0 data
data	0xxxxxxx		"212" s1 data
data	0xxxxxxx		"212" s2 data
data	0xxxxxxx		"212" s3 data
.	.		.
.	.		.
data	0xxxxxxx		"212" s20 data
data	0xxxxxxx		"212" s21 data
data	0xxxxxxx		"212" s22 data
data	0xxxxxxx		"212" s23 data
.	.		.
.	.		.
"213" patch data			
"214" patch data			
"215" patch data			
.			.
.			.
"246" patch data			
"247" patch data			
.			.
.			.
data	0xxxxxxx		"248" s0 data
data	0xxxxxxx		"248" s1 data
data	0xxxxxxx		"248" s2 data
data	0xxxxxxx		"248" s3 data
.	.		.
.	.		.
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
EOX	11110111	F7H	

## 4-4. BLOCK MULTI DATA DUMP

This message is transmitted from KC10 when system TRS parameter (5-8) is set, or after receiving the ALL MULTI DATA REQ.

See MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	single/multi
Sub status 2	01100000	60H	all multi
data	0xxxxxxx		"111" m0 data
data	0xxxxxxx		"111" m1 data
data	0xxxxxxx		"111" m2 data
data	0xxxxxxx		"111" m3 data
.	.		.
.	.		.
data	0xxxxxxx		"111" m36 data
data	0xxxxxxx		"111" m37 data
data	0xxxxxxx		"111" m38 data
data	0xxxxxxx		"111" m39 data
data	0xxxxxxx		"112" m0 data
data	0xxxxxxx		"112" m1 data
data	0xxxxxxx		"112" m2 data
data	0xxxxxxx		"112" m2 data
.	.		.
.	.		.
data	0xxxxxxx		"112" m36 data
data	0xxxxxxx		"112" m37 data
data	0xxxxxxx		"112" m38 data
data	0xxxxxxx		"112" m39 data
.	.		.
.	.		.
"113" patch data			
"114" patch data			
"115" patch data			
.			.
.			.
"126" patch data			
"127" patch data			
.			.
.			.
data	0xxxxxxx		"128" m0 data
data	0xxxxxxx		"128" m1 data
data	0xxxxxxx		"128" m2 data
data	0xxxxxxx		"128" m3 data
.	.		.
.	.		.
data	0xxxxxxx		"128" m36 data
data	0xxxxxxx		"128" m37 data
data	0xxxxxxx		"128" m38 data
data	0xxxxxxx		"128" m39 data
EOX	11110111	F7H	

## 4-5. ALL PATCH DATA DUMP

This message is transmitted when "ALL PATCH DATA REQUEST" is received.  
KC10 transmits all singles at first and all multi and drum.

See MULTI DATA LIST regarding the data.

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	22H	All block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	00000000	00H	

data	0xxxxxxx	"211" s0 data
data	0xxxxxxx	"211" s1 data
data	0xxxxxxx	"211" s2 data
data	0xxxxxxx	"211" s3 data

•  
•  
•

data	0xxxxxxx	"248" s20 data
data	0xxxxxxx	"248" s21 data
data	0xxxxxxx	"248" s22 data
data	0xxxxxxx	"248" s23 data
data	0xxxxxxx	"111" M0 data
data	0xxxxxxx	"111" M1 data
data	0xxxxxxx	"111" M2 data
data	0xxxxxxx	"111" M3 data

•  
•  
•

data	0xxxxxxx	"128" M36 data
data	0xxxxxxx	"128" M37 data
data	0xxxxxxx	"128" M38 data
data	0xxxxxxx	"128" M39 data
data	0xxxxxxx	DRUM d0 data
data	0xxxxxxx	DRUM d1 data
data	0xxxxxxx	DRUM d2 data
data	0xxxxxxx	DRUM d3 data

•  
•  
•

data	0xxxxxxx	DRUM d61 data
data	0xxxxxxx	DRUM d62 data
data	0xxxxxxx	DRUM d63 data
data	0xxxxxxx	DRUM d64 data
EOX	11110111	F7H

## 5. EXCLUSIVE RECOGNIZED RECEIVED DATA

## 5-1. ONE SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000000	00H	One patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0bbbbbbb		64-95 single "211" - "248"
EOX	11110111	F7H	96-111 multi "111" - "128"

## 5-2. ONE DRUM DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000000	00H	One patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	01H	drum
Sub status 2	00000000	00H	
EOX	11110111	F7H	

## 5-3. BLOCK SINGLE/MULTI DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000001	01H	block patch data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0xx00000	40H	single 60H multi
EOX	11110111	F7H	

## 5-4. ALL DATA REQUEST

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00000010	02H	all block data request
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	00000000	00H	
EOX	11110111	F7H	

## 5-5. ONE SINGLE/MULTI DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	0xxxxxxx		64-95 SINGLE "211" - "248"
data	0xxxxxxx		96-111 MULTI "111" - "128"
data	0xxxxxxx		patch data s0/m0
data	0xxxxxxx		patch data s1/m1
data	0xxxxxxx		patch data s2/m2
•			
•			
data	0xxxxxxx		patch data s21/m37
data	0xxxxxxx		patch data s22/m38
data	0xxxxxxx		patch data s23/m39
EOX	11110111	F7H	

## 5-6. ONE DRUM DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100000	20H	One patch data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000001	01H	drum
Sub status 2	00000000	00H	
data	0xxxxxxx		patch data d0
data	0xxxxxxx		patch data d1
data	0xxxxxxx		patch data d2
•			
•			
data	0xxxxxxx		patch data d61
data	0xxxxxxx		patch data d62
data	0xxxxxxx		patch data d63
data	0xxxxxxx		patch data d64
EOX	11110111	F7H	

## 5-7. BLOCK SINGLE DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	01000000	40H	all single
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
.	.		
.	.		
data	0xxxxxxx		"211" s20 data
data	0xxxxxxx		"211" s21 data
data	0xxxxxxx		"211" s22 data
data	0xxxxxxx		"211" s23 data
data	0xxxxxxx		"212" s0 data
data	0xxxxxxx		"212" s1 data
data	0xxxxxxx		"212" s2 data
data	0xxxxxxx		"212" s3 data
.	.		
.	.		
data	0xxxxxxx		"212" s20 data
data	0xxxxxxx		"212" s21 data
data	0xxxxxxx		"212" s22 data
data	0xxxxxxx		"212" s23 data
"213" patch data			
"214" patch data			
"215" patch data			
.			
.			
"246" patch data			
"247" patch data			
data	0xxxxxxx		"248" s0 data
data	0xxxxxxx		"248" s1 data
data	0xxxxxxx		"248" s2 data
data	0xxxxxxx		"248" s3 data
.	.		
.	.		
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
EOX	11110111	F7H	

## 5-8. BLOCK MULTI DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100001	21H	block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	01100000	60H	all multi
data	0xxxxxxx		"111" m0 data
data	0xxxxxxx		"111" m1 data
data	0xxxxxxx		"111" m2 data
data	0xxxxxxx		"111" m3 data
.	.		
.	.		
data	0xxxxxxx		"111" m36 data
data	0xxxxxxx		"111" m37 data
data	0xxxxxxx		"111" m38 data
data	0xxxxxxx		"111" m39 data
data	0xxxxxxx		"112" m0 data
data	0xxxxxxx		"112" m1 data
data	0xxxxxxx		"112" m2 data
data	0xxxxxxx		"112" m2 data
.	.		
.	.		
data	0xxxxxxx		"112" m36 data
data	0xxxxxxx		"112" m37 data
data	0xxxxxxx		"112" m38 data
data	0xxxxxxx		"112" m39 data
"113" patch data			
"114" patch data			
"115" patch data			
.			
.			
"126" patch data			
"127" patch data			
data	0xxxxxxx		"128" m0 data
data	0xxxxxxx		"128" m1 data
data	0xxxxxxx		"128" m2 data
data	0xxxxxxx		"128" m3 data
.	.		
.	.		
data	0xxxxxxx		"128" m36 data
data	0xxxxxxx		"128" m37 data
data	0xxxxxxx		"128" m38 data
data	0xxxxxxx		"128" m39 data
EOX	11110111	F7H	

## 5-9. ALL PATCH DATA DUMP

Status	11110000	F0H	System exclusive
Kawai ID no.	01000000	40H	
Channel no.	0000nnnn	0nH	
Function no.	00100010	22H	All block data dump
Group no.	00000000	00H	Synthesizer group
Machine ID no.	00000101	05H	KC10 ID. no.
Sub status 1	00000000	00H	
Sub status 2	00000000	00H	
data	0xxxxxxx		"211" s0 data
data	0xxxxxxx		"211" s1 data
data	0xxxxxxx		"211" s2 data
data	0xxxxxxx		"211" s3 data
.	.		
.	.		
data	0xxxxxxx		"248" s20 data
data	0xxxxxxx		"248" s21 data
data	0xxxxxxx		"248" s22 data
data	0xxxxxxx		"248" s23 data
data	0xxxxxxx		"111" M0 data
data	0xxxxxxx		"111" M1 data
data	0xxxxxxx		"111" M2 data
data	0xxxxxxx		"111" M3 data
.	.		
.	.		
data	0xxxxxxx		"128" M36 data
data	0xxxxxxx		"128" M37 data
data	0xxxxxxx		"128" M38 data
data	0xxxxxxx		"128" M39 data
data	0xxxxxxx		DRUM d0 data
data	0xxxxxxx		DRUM d1 data
data	0xxxxxxx		DRUM d2 data
data	0xxxxxxx		DRUM d3 data
.	.		
.	.		
data	0xxxxxxx		DRUM d61 data
data	0xxxxxxx		DRUM d62 data
data	0xxxxxxx		DRUM d63 data
data	0xxxxxxx		DRUM d64 data
EOX	11110111	F7H	

## 6. SINGLE DATA LIST

NO.	BYTE	PARAMETER NAME	DESCRIPTION
s00	00nnnnnn	vo1	0-63
s01	0nnnnnnn	wave	0-127/1-128
s02	0000000n	solo	1: on/0: off
s03	000nnnnn	vib speed	0-31
s04	000nnnnn	vib dep	0-31
s05	000000nn	vib shape	0-3
s06	000nnnnn	a.bend time	0-31
s07	00nnnnnn	a.bend depth	0-62/0-31 (0-31)
s08	000nnnnn	dco1 level	0-31
s09	000nnnnn	dco1 attack	0-31
s10	000vvvvv	dco1 decay	0-31
s11	000eeeeee	dco1 sustain	0-31
s12	000sssss	dco1 release	0-31
s13	000sssss	dco1 ls depth	0-30/0-15 (0-15)
s14	000000pp	dco1 velo table	0-3
s15	00011111	dco2 level	0-31
s16	000aaaaa	dco2 attack	0-31
s17	000ddddd	dco2 decay	0-31
s18	000sssss	dco2 sustain	0-31
s19	000rrrrr	dco2 release	0-31
s20	000kkkkk	dco2 ls depth	0-30/0-15 (0-15)
s21	000000pp	dco2 velo table	0-3
s22	0000000a	fix key sw	1: on/0: off
s23	0ddddddd	fix key no.	24-108
s23	0000000a	chorus sw	1: on/0: off

## 7. MULTI DATA LIST

NO.	BYTE	PARAMETER NAME	DESCRIPTION
<sec1>			
M0	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M1	0nnnnnnn	single	0-95/ "111" - "248"
M2	0000nnnn	rcv ch.	0-15/1-16
M3	000nnnnn	tune	0-20/0-10 (0-10)
M4	000nnnnn	level1	0-31
M5	000nnnnn	transpose	0-24/0-12 (0-12)
M6	0nnnnnnn	zone hi	36-96
M7	0nnnnnnn	zone low	36-96
M8	00000000	dummy	0
M9	00000000	dummy	0
<sec2>			
M10	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M11	0nnnnnnn	single	0-95/ "111" - "248"
M12	0000nnnn	rcv ch.	0-15/1-16
M13	000nnnnn	tune	0-20/0-10 (0-10)
M14	000nnnnn	level1	0-31
M15	000nnnnn	transpose	0-24/0-12 (0-12)
M16	0nnnnnnn	zone hi	36-96
M17	0nnnnnnn	zone low	36-96
M18	00000000	dummy	0
M19	00000000	dummy	0
<sec3>			
M20	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M21	0nnnnnnn	single	0-95/ "111" - "248"
M22	0000nnnn	rcv ch.	0-15/1-16
M23	000nnnnn	tune	0-20/0-10 (0-10)
M24	000nnnnn	level1	0-31
M25	000nnnnn	transpose	0-24/0-12 (0-12)
M26	0nnnnnnn	zone hi	36-96
M27	0nnnnnnn	zone low	36-96
M28	00000000	dummy	0
M29	00000000	dummy	0
<sec4>			
M30	000000nn	assign	0/off, 1/kybd, 2/midi, 3/mix
M31	0nnnnnnn	single	0-95/ "111" - "248"
M32	0000nnnn	rcv ch.	0-15/1-16
M33	000nnnnn	tune	0-20/0-10 (0-10)
M34	000nnnnn	level1	0-31
M35	000nnnnn	transpose	0-24/0-12 (0-12)
M36	0nnnnnnn	zone hi	36-96
M37	0nnnnnnn	zone low	36-96
M38	00000000	dummy	0
M39	00000000	dummy	0

## 8. DRUM DATA LIST

NO.	BYTE	PARAMETER NAME	DESCRIPTION
<COMMON>			
d00	0000cccc	volume	0-31
d01	000vvvvv	C1 drm no.	0-31
d02	000vvvvv	C1 drm level	0-31
d03	000vvvvv	C#1 drm no.	0-31
d04	000vvvvv	C#1 drm level	0-31
d05	000vvvvv	D1 drm no.	0-31
d06	000vvvvv	D1 drm level	0-31
d07	000vvvvv		
d08	000vvvvv		
d09	000vvvvv		
d010	000vvvvv		
.	.		
.	.		
.	.		
d061	000vvvvv	F#3 drm no.	0-31
d062	000vvvvv	F#3 drm level	0-31
d063	000vvvvv	G#3 drm no.	0-31
d064	000vvvvv	G#3 drm level	0-31



## 9. EXCLUSIVE FUNCTION TABLE

FUNCTION	FUNCTION NO.	SUB CMND 1	SUB CMND 2	DESCRIPTION	TRS	RCU
One Patch Dump Request	0 (00H)	0	64-95	ONE SINGLE DATA REQUEST	X	O
		0	96-111	ONE MULTI DATA REQUEST	X	O
		1	0	ONE DRUM DATA REQUEST	X	O
Block Patch Dump Request	1 (01H)	0	64	ALL SINGLE DATA REQUEST	X	O
		0	96	ALL MULTI DATA REQUEST	X	O
All Patch Dump Request	2 (02H)	0	0	ALL DATA REQUEST	X	O
One Patch Data Dump	32 (02H)	0	64-95	ONE SINGLE DATA DUMP	O	O
		0	96-111	ONE MULTI DATA DUMP	O	O
		1	0	ONE DRUM DATA DUMP	O	O
Block Patch Data Dump	33 (21H)	0	64	ALL SINGLE DATA DUMP	O	O
		0	96	ALL MULTI DATA DUMP	O	O
ALL Patch Data Dump	34 (22H)	0	0	ALL DATA DUMP	O	O

## 10. PROGRAM NO. CONVERT TABLE

## SINGLE PRESET

"	"11"	"12"	"13"	"14"	"15"	"16"	"17"	"18"
1	0 00H	8 08H	16 10H	24 18H	32 20H	40 28H	48 30H	56 38H
2	1 01H	9 09H	17 11H	25 19H	33 21H	41 29H	49 31H	57 39H
3	2 02H	10 0AH	18 12H	26 1AH	34 22H	42 2AH	50 32H	58 3AH
4	3 03H	11 0BH	19 13H	27 1BH	35 23H	43 2BH	51 33H	59 3BH
5	4 04H	12 0CH	20 14H	28 1CH	36 24H	44 2CH	52 34H	60 3CH
6	5 05H	13 0DH	21 15H	29 1DH	37 25H	45 2DH	53 35H	61 3DH
7	6 06H	14 0EH	22 16H	30 1EH	38 26H	46 2EH	54 36H	62 3EH
8	7 07H	15 0FH	23 17H	31 1FH	39 27H	47 2FH	55 37H	63 3FH

## SINGLE USER

"	"21"	"22"	"23"	"24"
1	64 40H	72 48H	80 50H	88 58H
2	65 41H	73 49H	81 51H	89 59H
3	66 42H	74 4AH	82 52H	90 5AH
4	67 43H	75 4BH	83 53H	91 5BH
5	68 44H	76 4CH	84 54H	92 5CH
6	69 45H	77 4DH	85 55H	93 5DH
7	70 46H	78 4EH	86 56H	94 5EH
8	71 47H	79 4FH	87 57H	95 5FH

## MULTI USER

"	"11"	"12"
1	96 60H	104 68H
2	97 61H	105 69H
3	98 62H	106 6AH
4	99 63H	107 6BH
5	100 64H	108 6CH
6	101 65H	109 6DH
7	102 66H	110 6EH
8	103 67H	111 6FH

## 5. WAVE LIST

1	PIANO & PIANO 1	65	DC BASS FRETLESS
2	PIANO & PIANO 2	66	DC BASS FRETLESS & BASS SLAP
3	PIANO & PIANO 3	67	DC FLUTE & BASS FRETLESS
4	PIANO & PIANO 4	68	DC GUITAR A
5	PIANO & PIANO 5	69	DC GUITAR E
6	PIANO & PIANO 6	70	DC GUITAR A & GUITAR E
7	PIANO & RIDE	71	DC GUITAR E & GUITAR A
8	PIANO & PIANO E 1	72	DC GUITAR A & GUITAR DIST
9	PIANO & PIANO E 2	73	DC GUITAR E & GUITAR DIST
10	PIANO E & PIANO E 1	74	DC HARP
11	PIANO E & PIANO E 2	75	DC CLAVI & SQR H
12	PIANO E & RIDE	76	DC SQR LEAD
13	BASS E & BASS E	77	DC SQR LEAD & RANDOM
14	BASS E & BASS SYN 1	78	DC ORGAN E1
15	BASS E & BASS SYN 2	79	DC ORGAN E1 & ORGAN E2
16	BASS E & BASS WOOD	80	DC ORGAN E2
17	BASS E & GUITAR A	81	DC ORGAN E2 & ORGAN E1
18	BASS E & RANDOM	82	DC BIG PIPE & FLUTE
19	BASS SYN & BASS SYN	83	DC FLUTE & BIG PIPE
20	BASS SYN & BASS WOOD	84	DC ORGAN BIG PIPE
21	BASS SYN & GUITAR A	85	DC CLAVI
22	BASS SYN & CONGA	86	DC HARPSICHORD
23	BASS SYN & SD H	87	DC HARPSICHORD & RANDOM
24	BASS WOOD & BASS WOOD 1	88	DC PIANO E
25	BASS WOOD & BASS WOOD 2	89	DC PIANO E & Mallet
26	BASS WOOD & GUITAR A	90	DC PIANO E & RANDOM
27	GUITAR A & GUITAR A	91	DC BELL
28	GUITAR A & GUITAR FUZZ	92	DC BELL & RANDOM
29	GUITAR A & CONGA	93	DC Mallet
30	GUITAR A & SD H	94	DC STEEL DRUM
31	GUITAR FUZZ & GUITAR FUZZ	95	DC STEEL DRUM & RANDOM
32	STRINGS & STRINGS 1	96	DC VIBE
33	STRINGS & STRINGS 2	97	DC VIBE & RANDOM
34	STRINGS & STRINGS 3	98	DC VIOLIN
35	STRINGS & STRINGS 4	99	DC VIOLIN & RANDOM
36	STRINGS & VOICE 1	100	DC HARMONICA
37	STRINGS & VOICE 2	101	DC HARMONICA & RANDOM
38	STRINGS & CRASH	102	DC CLARINET
39	STRINGS & RIDE	103	DC OBOE
40	STRINGS & RANDOM	104	DC OBOE & RANDOM
41	VOICE & VOICE	105	DC SAX 1
42	VOICE & CRASH	106	DC SAX & RANDOM
43	VOICE & RIDE	107	DC SAX 2
44	BRASS AC & BRASS AC	108	SE PIANO & COWBELL
45	BRASS AS & BRASS SYN	109	SE PIANO & PIANO
46	BRASS AC & PIANO	110	SE STRINGS & BRASS AC
47	BRASS AC & PIANO E	111	SE STRINGS & PIANO
48	BRASS SYN & PIANO HI	112	SE STRINGS & PIANO E
49	BRASS AC & CRASH	113	SE STRINGS & PIANO E (L)
50	BRASS AC & RIDE	114	SE VOICE & BRASS AC
51	BRASS SYN & BRASS SYN	115	SE VOICE & PIANO E
52	BRASS SYN & PIANO E	116	SE BASS SYN & BD
53	BRASS SYN & RANDOM	117	SE PRG & BANK 10
54	FLUTE & FLUTE	118	SE DC OMNI
55	FLUTE & BASS AC	119	DR RIDE & CRASH
56	FLUTE & BASS E	120	SP BASS E & CLAVI
57	FLUTE & GUITAR A	121	SP BASS E & PIANO E
58	FLUTE & SD H	122	SP BASS SYN & STRINGS
59	DC SIN 1 & 2	123	SP BASS SYN & VOICE
60	DC SAW 1	124	SP BASS WOOD & PIANO
61	DC SAW 2	125	SP STRINGS & BRASS AC
62	DC SAW 3	126	SP VOICE & BRASS AC
63	DC SAW 1 & RANDOM	127	SP VOICE & BRASS SYN
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# MIDI Implementation Chart

Function	Transmitted	Received (Keyboard)	Received (Drum section)	Remarks
<b>Basic</b> : Default <b>Channel</b> : Changed	1 – 16 1 – 16	1 – 9, 11 – 16 1 – 9, 11 – 16	10 X	Memorized
<b>Mode</b> : Default : Message : Altered	3 X ***	1, 3 OMNI ON/OFF X	3 X X	
<b>Note</b> <b>Number</b> : True Voice	24 – 108 ***	12 – 120 12 – 120	36 – 67 36 – 67	
<b>Velocity</b> : Note ON : Note OFF	*1 X	*1 X	○ X	
<b>After</b> : Key's <b>Touch</b> : Ch's	X X	X X	X X	
<b>Pitch Bend</b>	*1	*1	X	
<b>Control</b> 1 <b>Change</b> 6 7 64 100, 101	*1 *1 X *1 *2	*1 *1 ○ *1 *2	X X ○ X X	Modulation  Data Entry Volume Hold 1 RPN LSB, MSB
<b>Program</b> <b>Change</b> : True No. <b>Exclusive</b>	*1 0 – 111 *** *1	*1 0 – 111 *1	*1 0 – 35 *1	
<b>System</b> : Song Pos <b>Common</b> : Song Sel : Tune	X X X	X X X	X X X	
<b>System</b> : Clock <b>Real Time</b> : Commands	○ X	○ X	X X	
<b>Aux</b> : Local ON/OFF : All Notes OFF <b>Messages</b> : Active Sense : Reset	X ○ (123) ○ X	X ○ (123 – 127) ○ X	X X X X	
<b>Notes</b>	*1 = Can be set ○ or X. *2 = RPN#1: Only recognizes Pitch Bend Sensitivity.			

Mode 1 : OMNI ON, POLY  
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO  
Mode 4 : OMNI OFF, MONO

○ : Y  
X : N

# SPECIFICATIONS

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- **KEYBOARD :** 61 keys (with velocity)
- **WAVEFORMS :** 16bit PCM + 16bit DC (Digital Cyclic)
- **POLYPHONY :** 10 (SINGLE/MULTI) + 4 (DRUM SECTION)
- **PROGRAM MEMORY :** SINGLE patches : 96 (64 preset + 32 user)  
MULTI patches : 16  
RHYTHM patterns : 36
- **MULTI CAPABILITY :** 4 SECTIONs + DRUM SECTION
- **RHYTHM OPERATION :** Start/Stop, Intro/Ending, Fill In, Auto Fill In
- **AUTO ARPEGGIATOR :** 8 Tone Colors, Beat(1/8, 1/16), Range(1/2/3 Octaves),  
Form (Up, Down, Up/Down, Random), Volume
- **SINGLE EDIT :**
  - \* Volume, Key Fix, Fixed Key No., Chorus On/Off
  - \* Wave Select, Solo On/Off
  - \* Vibrato Speed, Vibrato Depth, Vibrato Shape, Auto Bend Time, Auto Bend Depth
  - \* Level, Attack Time, Decay Time, Sustain Level, Release Time, KS Envelope Level, Velocity Curve
- **MULTI EDIT :** SECTION Play, SINGLE Assign, Receive Channel, Level, Tune, Transpose, Zone Hi, Zone Lo
- **RHYTHM EDIT :** RHYTHM Volume, HAND PERCUSSION On/Off, AUTO APREGGIATOR On/Off, AUTO ARPEGGIATOR Volume, AUTO ARPEGGIATOR Form, AUTO ARPEGGIATOR Range, AUTO ARPEGGIATOR Beat, AUTO ARPEGGIATOR Tone, AUTO FILL IN On/Off, AUTO ARPEGGIATOR Volume
- **JACKS :** DC IN, LINE OUT(R, L/MONO), HOLD, HEADPHONES, MIDI IN/OUT/THRU
- **DISPLAY :** 8 Segment LED x 3
- **DIMENSIONS :** 966.5 x 208.1 x 76.5 (mm)
- **WEIGHT :** 4.3 kg

## A REFERENCE TO RADIO INTERFERENCE

"This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions' may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate the drum machine with respect to the receiver
- move the drum machine away from the receiver
- plug the drum machine into a different outlet so that drum machine and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems."  
This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.







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